

=> file reg

FILE 'REGISTRY' ENTERED AT 09:01:52 ON 17 SEP 2003  
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=> display history full l1-

L1 FILE 'LREGISTRY' ENTERED AT 08:16:23 ON 17 SEP 2003  
STR

L2 FILE 'REGISTRY' ENTERED AT 08:21:04 ON 17 SEP 2003  
SCR 971

L3 50 SEA SSS SAM L1 AND L2

L4 FILE 'LREGISTRY' ENTERED AT 08:22:22 ON 17 SEP 2003  
STR L1

L5 FILE 'REGISTRY' ENTERED AT 08:24:03 ON 17 SEP 2003  
7 SEA SSS SAM L4 AND L2

L6 SCR 1918

L7 1 SEA SSS SAM L4 AND L2 NOT L6

L8 235 SEA SSS FUL L4 AND L2 NOT L6  
SAV L8 HON443/A

L9 FILE 'LCA' ENTERED AT 08:31:08 ON 17 SEP 2003  
7647 SEA (FILM? OR THINFILM? OR LAYER? OR OVERLAY? OR  
OVERLAID? OR LAMIN? OR LAMEL? OR SHEET? OR LEAF? OR  
FOIL? OR COAT? OR TOPCOAT? OR OVERCOAT? OR VENEER? OR  
SHEATH? OR COVER? OR ENVELOP? OR ENCAS? OR ENWRAP? OR  
OVERSPREAD?)/BI,AB

L10 FILE 'HCA' ENTERED AT 08:33:05 ON 17 SEP 2003  
76051 SEA (OPTIC? OR REFRACT? OR REFLECT? OR DIFFRACT?) (2A) L9

L11 296086 SEA POLARIZ? OR POLARIS?

L12 566 SEA L8

L13 1 SEA L12 AND L10

L14 9 SEA L12 AND L11  
E COATINGS/CV

L15 7698 SEA COATINGS/CV  
E COATING MATERIALS/CV

L16 237560 SEA "COATING MATERIALS"/CV  
E COATING PROCESS/CV

L17 106135 SEA "COATING PROCESS"/CV

L18 7 SEA L12 AND (L15 OR L16 OR L17)

L19 87 SEA L12 AND L9

L20 1766291 SEA OPTIC? OR REFRACT? OR REFLECT? OR DIFFRACT? OR  
POLARIZ? OR POLARIS?

L21 14 SEA L19 AND L20

L22 16 SEA L13 OR L14 OR L18

L23 10 SEA L21 NOT L22  
L24 67 SEA L19 NOT (L22 OR L23)

=> d l8 que stat

L2 SCR 971  
L4 STR

Cy~C≡C~G1~C≡C~Cy                      Cy@10  
1 2 3 4 5 6 7

REP G1=(1-3) 10

NODE ATTRIBUTES:

CONNECT IS E1 RC AT 1

CONNECT IS E1 RC AT 7

CONNECT IS E2 RC AT 10

DEFAULT MLEVEL IS ATOM

GGCAT IS UNS AT 1

GGCAT IS UNS AT 7

GGCAT IS UNS AT 10

DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:

RING(S) ARE ISOLATED OR EMBEDDED

NUMBER OF NODES IS 8

STEREO ATTRIBUTES: NONE

L6 SCR 1918

L8 235 SEA FILE=REGISTRY SSS FUL L4 AND L2 NOT L6

100.0% PROCESSED 51908 ITERATIONS

235 ANSWERS

SEARCH TIME: 00.00.01

=> file hca

FILE 'HCA' ENTERED AT 09:04:39 ON 17 SEP 2003

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=> d l22 1-16 cbib abs hitstr hitind

L22 ANSWER 1 OF 16 HCA COPYRIGHT 2003 ACS on STN

138:90305 Thiophene-containing organometallic polymers studied by  
near-edge x-ray absorption spectroscopy. Polzonetti, G.; Iucci, G.;  
Altamura, P.; Ferri, A.; Paolucci, G.; Goldoni, A.; Parent, Ph.;  
Laffon, C.; Russo, M. V. (Department of Physics and Unita INFM,  
University "Roma Tre", Rome, I-00146, Italy). Surface and Interface

Analysis, 34(1), 588-592 (English) 2002. CODEN: SIANDQ. ISSN: 0142-2421. Publisher: John Wiley & Sons Ltd..

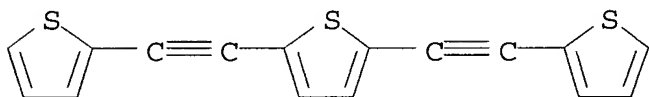
AB A near-edge x-ray absorption fine structure (NEXAFS) spectroscopy investigation on the electronic structure of some novel .pi.-conjugated organometallic polymers is presented. The investigated materials consist of Pt and Pd(II) complex units linked together through .sigma.-bonded org. spacers of ethynyl-thiophene type in a polymeric array. The C K-edge NEXAFS spectra were interpreted by comparison with literature data and with the spectra of ref. samples. The linking between the thiophene rings and alkyne groups produces a splitting of the C 1s .fwdarw. .pi.\* peak obsd. in the spectra of the thiophene systems. Angle-dependent measurements, performed at normal and grazing incidence of the linearly **polarized** photons, evidenced a preferential orientation of the polymer chains with an av. tilt angle of 45.degree. for the thiophene moieties.

IT 93297-81-5

(model compd.; thiophene-contg. organometallic polymers studied by near-edge x-ray absorption spectroscopy)

RN 93297-81-5 HCA

CN Thiophene, 2,5-bis(2-thienylethynyl)- (9CI) (CA INDEX NAME)



CC 36-2 (Physical Properties of Synthetic High Polymers)  
Section cross-reference(s): 29

IT 93297-81-5

(model compd.; thiophene-contg. organometallic polymers studied by near-edge x-ray absorption spectroscopy)

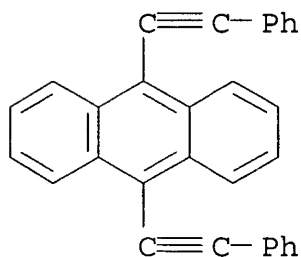
L22 ANSWER 2 OF 16 HCA COPYRIGHT 2003 ACS on STN

137:343396 The Effect of Pressure and of Controlled Stretch on the Luminescent Properties of 9,10-Bis(phenylethynyl)anthracene. Zhu, A.; White, J. O.; Drickamer, H. G. (School of Chemical Sciences, The Frederick Seitz Materials Research Laboratory, University of Illinois, Urbana, IL, 61801-3792, USA). Journal of Physical Chemistry A, 106(40), 9209-9212 (English) 2002. CODEN: JPCAFH. ISSN: 1089-5639. Publisher: American Chemical Society.

AB The luminescence properties of 9,10-bis(phenylethynyl) anthracene have been investigated in solid poly(vinyl acetate) (PVAc) and a copolymer of vinyl chloride (VCl) and vinyl acetate (VAc) as a function of pressure to 65 kbar and of controlled stretch over a range of up to 4 times the original length using the 400 nm line of a frequency-doubled Ti:sapphire laser. With increasing pressure, the intensity (cor. for the absorption at 400 nm) decreases significantly and there is a distinct change in peak shape in the region of 20-40 kbar. In this region, the lifetime increases from 3.5 +/- 0.2 to 4.0 +/- 0.2 ns. The result can be explained on the basis of the anal. of Levitus and Garcia-Garibay. The red shift of

the absorption peak is equiv. to a blue shift of the excitation laser, which results in excitation of a different **polarization** of the mol. Up to a stretch of 2, the controlled stretch produces an increase of intensity for laser excitation **polarized** in the direction of stretch and a decrease for excitation **polarized** at 90.degree. to the stretch, indicating that mols. are being oriented preferentially with the stretch. At larger stretches, there is a very similar increase in emission intensity for both orientations of the exciting light. Various aspects of the observations are considered but there appears to be no simple explanation for the apparent increase in oscillator strength.

IT 10075-85-1, 9,10-Bis(phenylethynyl)anthracene  
(effect of pressure and controlled stretch on luminescent properties of bisphenylethynylantracene)  
RN 10075-85-1 HCA  
CN Anthracene, 9,10-bis(phenylethynyl)- (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

IT 10075-85-1, 9,10-Bis(phenylethynyl)anthracene  
(effect of pressure and controlled stretch on luminescent properties of bisphenylethynylantracene)

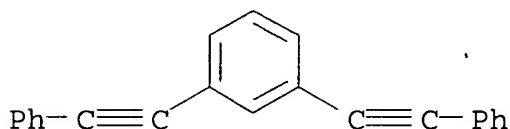
L22 ANSWER 3 OF 16 HCA COPYRIGHT 2003 ACS on STN

137:78686 Linear and nonlinear **polarizabilities** of fragmental molecules for the phenylacetylene dendrimers. Nomura, Yasushi; Sugishita, Takashi; Narita, Susumu; Shibuya, Tai-Ichi (Department of Chemistry, Faculty of Textile Science and Technology, Shinshu University, Nagano, 386-8567, Japan). Bulletin of the Chemical Society of Japan, 75(3), 481-486 (English) 2002. CODEN: BCSJA8. ISSN: 0009-2673. Publisher: Chemical Society of Japan.

AB Linear and nonlinear **polarizabilities** of small fragmental mols. for the phenylacetylene dendrimethylrs were calcd. with the frequency-dependent moment schemes based on the sum-over-states expressions of the **polarizabilities**, including all of the singly-excited configurations in the semiempirical CNDO/S approxn. The smallest system, consisting of two benzene rings connected by an acetylene chain, corresponds to a mol. unit that is usually adopted in the exciton model for a theor. anal. of the phenylacetylene dendrimethylrs. The dependences of the **polarizabilities**

upon the mol. size were examd. The linear **polarizability** in the static-field condition increases linearly with the no. of acetylene chains (N). MO calcns. of the nonlinear **polarizabilities** of these mols. were carried out for the first time. The third-order **polarizability** in the static-field condition depends quadratically upon N, which suggests that two chromophores at a time participate in the optical process of the third-order **polarization**.

IT 13141-36-1, 1,3-Bis(phenylethynyl)benzene  
 (linear and nonlinear **polarizabilities** of fragmental mols. for the phenylacetylene dendrimers)  
 RN 13141-36-1 HCA  
 CN Benzene, 1,3-bis(phenylethynyl)- (9CI) (CA INDEX NAME)



CC 22-13 (Physical Organic Chemistry)  
 Section cross-reference(s): 73  
 ST linear **polarizability** fragmental mol phenylacetylene dendrimer MO; nonlinear **polarizability** fragmental mol phenylacetylene dendrimer MO  
 IT Molecular orbital methods  
 (CNDO/S-CI; linear and nonlinear **polarizabilities** of fragmental mols. for the phenylacetylene dendrimers)  
 IT Simulation and Modeling, physicochemical  
 (exciton; linear and nonlinear **polarizabilities** of fragmental mols. for the phenylacetylene dendrimers)  
 IT **Polarizability**  
 (frequency-dependent; linear and nonlinear **polarizabilities** of fragmental mols. for the phenylacetylene dendrimers)  
 IT Third-order nonlinear optical properties  
 (hyperpolarizability; linear and nonlinear **polarizabilities** of fragmental mols. for the phenylacetylene dendrimers)  
 IT Chromophores  
 Exciton  
 Nonlinear optical properties  
 Optical hyperpolarizability  
 (linear and nonlinear **polarizabilities** of fragmental mols. for the phenylacetylene dendrimers)  
 IT Dendritic polymers  
 (linear and nonlinear **polarizabilities** of fragmental mols. for the phenylacetylene dendrimers)  
 IT **Polarizability**  
 (linear; linear and nonlinear **polarizabilities** of fragmental mols. for the phenylacetylene dendrimers)  
 IT AM1 MO (molecular orbital)

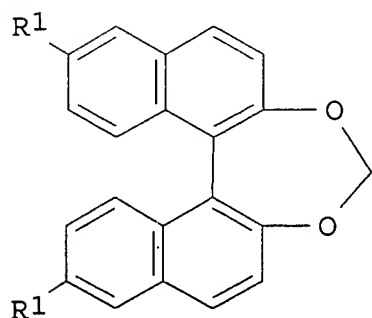
(optimized geometry; linear and nonlinear **polarizabilities** of fragmental mols. for the phenylacetylene dendrimers)

- IT Optical hyperpolarizability  
(second-order; linear and nonlinear **polarizabilities** of fragmental mols. for the phenylacetylene dendrimers)
- IT Optical hyperpolarizability  
(third-order; linear and nonlinear **polarizabilities** of fragmental mols. for the phenylacetylene dendrimers)
- IT 71-43-2, Benzene, properties 501-65-5, Tolan 13141-36-1,  
1,3-Bis(phenylethynyl)benzene 118688-56-5 440643-97-0  
(linear and nonlinear **polarizabilities** of fragmental mols. for the phenylacetylene dendrimers)

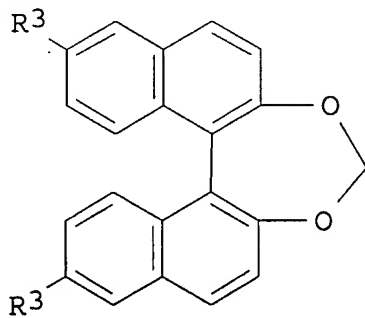
L22 ANSWER 4 OF 16 HCA COPYRIGHT 2003 ACS on STN

137:54375 Optically active compounds, photoreactive chiral agents, liquid crystal compositions, method for changing liquid crystal twist structures, fixing of liquid crystal spiral structure, liquid crystal color filters, **optical films**, and recording materials. Yumoto, Masatoshi; Hayashi, Keiichiro; Ichihashi, Mitsuyoshi (Fuji Photo Film Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2002179669 A2 20020626, 25 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2000-380919 20001214.

GI



I



II

AB Optically active compds. I ( $R_1$  = (un)substituted alkynyl,  $CR_2:CH_2$ ;  $R_2$  = (un)substituted aryl, heterocycle; binaphthyl component has (R) or (S) chirality) and photoreactive chiral agents II ( $R_3$  = (un)substituted alkynyl, (un)substituted aryl,  $CR_4:CH_2$ ,  $CH:CHR_5$ ;  $R_4$  = (un)substituted aryl, (un)substituted heterocycle;  $R_5$  = Ph, acyl, Ph or naphthyl with alkoxycarbonyl or aryloxycarbonyl substitution; binaphthyl moiety has (R) or (S) chirality) are claimed. Liq. crystal compns., for color filters, optical filters, and recording materials, contg. the said chiral agents are also claimed. The compns. may comprise polymerizable liq. crystals and photopolymn. initiators and method for stabilizing its liq. crystal spiral are also claimed. Also, twist structure of the compns. may be varied by changing the structure of the chiral agent by irradiation of light.

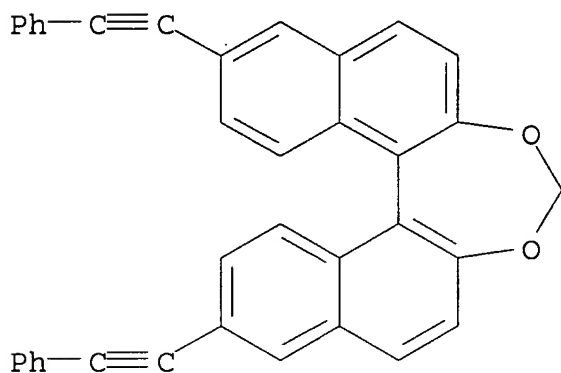
Recording materials contg. the chiral agents and liq. crystals are also claimed. Chiral agents which largely change liq. crystal twist angle on light irradiation are obtained.

IT 438244-51-0P

(optically active dinaphtholdioxepine chiral agents for controlling liq. crystal structures and for optical instruments)

RN 438244-51-0 HCA

CN Dinaphtho[2,1-d:1',2'-f][1,3]dioxepin, 9,14-bis(phenylethynyl)-, (11bR) - (9CI) (CA INDEX NAME)



IC ICM C07D321-10

ICS C09K019-54; G02B005-20; G02B005-30; G02F001-13; G02F001-1334; G02F001-1335; C07M007-00

CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

Section cross-reference(s): 28, 74, 75

IT **Polarizing films**

(circular; **optically** active dinaphtholdioxepine chiral agents for controlling liq. crystal structures and for optical instruments)

IT 438244-51-0P 438244-52-1P 438244-53-2P 438244-54-3P  
438244-55-4P

(optically active dinaphtholdioxepine chiral agents for controlling liq. crystal structures and for optical instruments)

L22 ANSWER 5 OF 16 HCA COPYRIGHT 2003 ACS on STN

135:172737 Voltage-Dependent Luminescence Properties of Molecularly Doped Polymer System. Wang, Mingliang; Zhang, Junxiang; Liu, Juzheng; Xu, Chunxiang (Department of Chemistry and Chemical Engineering, Southeast University, Nanjing, 210096, Peop. Rep. China). Journal of Solid State Chemistry, 158(2), 242-244 (English) 2001. CODEN: JSSCBI. ISSN: 0022-4596. Publisher: Academic Press.

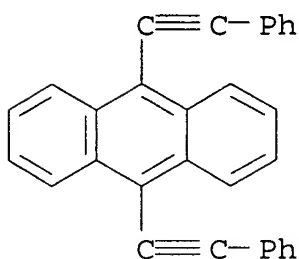
AB Single-layer light-emitting diodes (LEDs) are fabricated using a mixt. of a blue-emitting polymer and green-emitting 9,10-bis(phenylethynyl)anthracene as emitting layer. The blend device with these two components in the emitting layer exhibits voltage-induced evolution of the electroluminescence. But when

polystyrene is also blended into the emitting layer, the EL spectra show emission bands from both ether-PPV and BPEA in proportion to concns. of the two materials, and the spectra exhibit no change with applied voltage. This implies that doping inert polymer is helpful in suppressing voltage-induced evolution of electroluminescence in LED blends. (c) 2001 Academic Press.

IT 10075-85-1, 9,10-Bis(phenylethynyl)anthracene  
(voltage-dependent luminescence properties of molecularly doped polymer system)

RN 10075-85-1 HCA

CN Anthracene, 9,10-bis(phenylethynyl)- (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)  
Section cross-reference(s): 36

IT **Coating process**  
(spin; voltage-dependent luminescence properties of molecularly doped polymer system)

IT 10075-85-1, 9,10-Bis(phenylethynyl)anthracene  
(voltage-dependent luminescence properties of molecularly doped polymer system)

L22 ANSWER 6 OF 16 HCA COPYRIGHT 2003 ACS on STN

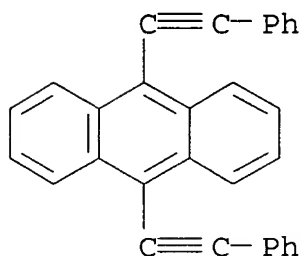
133:266455 **Polarized** Electronic Spectroscopy and Photophysical Properties of 9,10-Bis(phenylethynyl)anthracene. Levitus, Marcia; Garcia-Garibay, Miguel A. (Department of Chemistry and Biochemistry, University of California, Los Angeles, CA, 90095, USA). Journal of Physical Chemistry A, 104(38), 8632-8637 (English) 2000. CODEN: JPCAFH. ISSN: 1089-5639. Publisher: American Chemical Society.

AB The photophysics and electronic spectroscopy of 9,10-bis(phenylethynyl)anthracene (BPEA) were studied using absorption spectroscopy with **polarized** light, fluorescence anisotropy, and simple semiempirical calcns. The UV-visible spectrum of BPEA in fluid media shows a diminished vibrational resoln. as compared to the fluorescence spectrum, whereas this resoln. is recovered when a polyethylene film is used as the solvent. By comparison with the results of the semiempirical calcns., the behavior in fluid media is a result of the coexistence of several conformations. But only the planar conformation exists in the polymer, giving a well-resolved spectrum. Dichroic UV-visible spectra show that the lowest energy transition is



**polarized** along the long axis of the mol. (short axis of the anthracene frame) and shows the existence of an overlapping blue-shifted band with perpendicular **polarization**, which has null oscillator strength in pristine anthracene. The spectral overlap is also evidenced in both the excitation wavelength dependence of the limiting fluorescence anisotropy and the results of the semiempirical calcns.

IT 10075-85-1, 9,10-Bis(phenylethynyl)anthracene  
 (polarized electronic spectroscopy and photophys.  
 properties of 9,10-bis(phenylethynyl)anthracene)  
 RN 10075-85-1 HCA  
 CN Anthracene, 9,10-bis(phenylethynyl)- (6CI, 7CI, 8CI, 9CI) (CA INDEX  
 NAME)



CC 22-9 (Physical Organic Chemistry)  
 Section cross-reference(s): 73  
 ST **polarized** electronic spectroscopy photophysics  
 bisphenylethynylantracene  
 IT INDO/S (molecular orbital)  
 (ZINDO/S; **polarized** electronic spectroscopy and  
 photophys. properties of 9,10-bis(phenylethynyl)anthracene)  
 IT Fluorescence  
 (anisotropy; **polarized** electronic spectroscopy and  
 photophys. properties of 9,10-bis(phenylethynyl)anthracene)  
 IT Solvent effect  
 (diminished vibrational resolu. in fluid; **polarized**  
 electronic spectroscopy and photophys. properties of  
 9,10-bis(phenylethynyl)anthracene)  
 IT Spectra  
 (electronic; **polarized** electronic spectroscopy and  
 photophys. properties of 9,10-bis(phenylethynyl)anthracene)  
 IT Polymers, uses  
 (matrix; **polarized** electronic spectroscopy and  
 photophys. properties of 9,10-bis(phenylethynyl)anthracene)  
 IT Dichroism  
 (photoinduced; **polarized** electronic spectroscopy and  
 photophys. properties of 9,10-bis(phenylethynyl)anthracene)  
 IT AM1 MO (molecular orbital)  
 CI (configuration interaction)  
 Conformation  
 Conformers  
 Dichroism

Films  
Internal rotation  
Matrix media  
Molecular orientation  
Molecular vibration  
Oscillator strength  
Photoexcitation  
Photophysics  
**Polarized** optical spectra  
Quantum transition  
Substituent effects  
Vibronic transition

(**polarized** electronic spectroscopy and photophys.  
properties of 9,10-bis(phenylethynyl)anthracene)

IT 120-12-7D, Anthracene, 9,10-disubstituted, properties  
10075-85-1, 9,10-Bis(phenylethynyl)anthracene  
(**polarized** electronic spectroscopy and photophys.  
properties of 9,10-bis(phenylethynyl)anthracene)

L22 ANSWER 7 OF 16 HCA COPYRIGHT 2003 ACS on STN

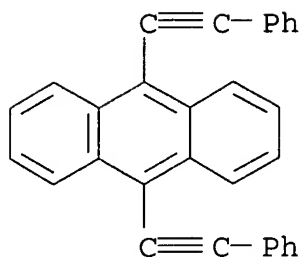
132:238035 Formation of multilayered photonic polymer composites.  
Mikhael, Michael G.; Boufelfel, Ali; Yializis, Angelo (Sigma  
Laboratories, Inc., USA). U.S. US 6040017 A 20000321, 5 pp.  
(English). CODEN: USXXAM. APPLICATION: US 1998-165999 19981002.

AB Methods for forming a sequential multilayered film polymer composite  
via a binary evaporator system from either a homogeneous soln. or a  
heterogeneous slurry are described which entail (a) evapg. from a  
first evaporator an electron acceptor dopant at sufficient temps.  
and pressures to allow the evapn.; condensing the vapor of the  
dopant onto a temp. controlled substrate which is attached to a  
rotating drum to form a layer; flash-evapg. from a second evaporator  
a mixt. of an electron donor org. substance and a radiation curable  
acrylate monomer at sufficient pressures and temps. which allow the  
evapn. of each constituent; condensing the mixt. vapor onto the  
previously deposited dopant; curing the layer with a radiation  
source; and repeating the above steps until a desired no. of layers  
is obtained. The polymer composites may be photoconducting polymer  
composites, elec. conducting polymer composites, or nonlinear  
optical polymer composites, esp. nonlinear optical polymer  
composites for photolimiting applications.

IT 10075-85-1, 9,10-Bis-(phenylethynyl)anthracene  
(multilayered polymer composite formation using vacuum flash  
evapn.)

RN 10075-85-1 HCA

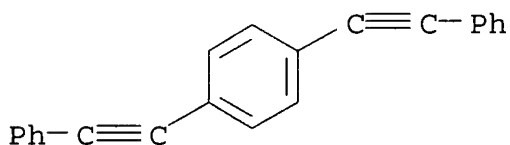
CN Anthracene, 9,10-bis(phenylethynyl)- (6CI, 7CI, 8CI, 9CI) (CA INDEX  
NAME)



- IC ICM C23C016-48  
 NCL 427496000  
 CC 38-2 (Plastics Fabrication and Uses)  
 Section cross-reference(s): 73, 74, 76  
 IT **Coating process**  
 Composites  
 Conducting polymers  
 Nonlinear optical materials  
 (multilayered polymer composite formation using vacuum flash evapn.)
- IT 7429-90-5, Aluminum, uses 10075-85-1, 9,10-Bis-(phenylethynyl)anthracene 33041-41-7, Bisphenol A diglycidylether diacrylate homopolymer 50926-11-9, Indium tin oxide 99685-96-8, [5,6]Fullerene-C60-Ih  
 (multilayered polymer composite formation using vacuum flash evapn.)
- L22 ANSWER 8 OF 16 HCA COPYRIGHT 2003 ACS on STN  
 131:323232 Ultra-high performance photoluminescent **polarizers** based on melt-processed polymer blends. Eglin, Michael; Montali, Andrea; Palmans, Anja R. A.; Tervoort, Theo; Smith, Paul; Weder, Christoph (Department of Materials, Institute of Polymers, ETH Zurich, Zurich, CH-8092, Switz.). Journal of Materials Chemistry, 9(9), 2221-2226 (English) 1999. CODEN: JMACEP. ISSN: 0959-9428. Publisher: Royal Society of Chemistry.
- AB Photoluminescent **polarizers** that comprise uniaxially oriented photoluminescent species which absorb and emit light in highly linearly **polarized** fashion, can efficiently combine the **polarization** of light and the generation of bright colors. We here report the prepn. and characterization of such **polarizers** by simple melt-processing and solid-state deformation of blends of a photoluminescent guest and a thermoplastic matrix polymer. The orientation behavior of a poly(2,5-dialkoxy-p-phenyleneethynylene) deriv. (EHO-OPPE), 1,4-bis(phenylethynyl)benzene, 1,4-bis(4-dodecyloxyphenylethynyl)benzene was systematically compared in different polyethylene grades. Expts. suggest that if phase-sepn. between the photoluminescent guest and the matrix polymer is reduced during the prepn. of the pristine (i.e. unstretched) blend films, photoluminescent **polarizers** can be produced which exhibit unusually high dichroic properties at minimal draw ratios. In

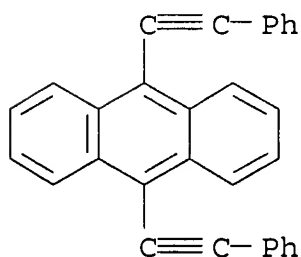
connection with this finding, an optimized, melt-processed blend based on 1,4-bis(4-dodecyloxyphenylethynyl)benzene and linear low-d. polyethylene was developed that allows efficient manufg. of photoluminescent **polarizers** which at draw ratios of only 10 exhibit dichroic ratios exceeding 50.

IT 1849-27-0, 1,4-Bis(phenylethynyl)benzene  
 (ultra-high performance photoluminescent **polarizers**  
 based on melt-processed polyethylene blends with)  
 RN 1849-27-0 HCA  
 CN Benzene, 1,4-bis(phenylethynyl)- (9CI) (CA INDEX NAME)



CC 37-3 (Plastics Manufacture and Processing)  
 Section cross-reference(s): 38, 73  
 ST photoluminescent **polarizer** polyethylene blend; LLDPE  
 photoluminescent **polarizer** blend; polyphenylene  
 polyacetylene photoluminescent **polarizer** polyethylene  
 blend; phenylethynylbenzene photoluminescent **polarizer**  
 polyethylene blend; dodecyloxyphenylethynylbenzene photoluminescent  
**polarizer** polyethylene blend  
 IT Dichroism  
 (photoinduced; ultra-high performance photoluminescent  
**polarizers** based on melt-processed polymer blends)  
 IT Luminescence  
 (ultra-high performance photoluminescent **polarizers**  
 based on melt-processed polymer blends)  
 IT Polymer blends  
 (ultra-high performance photoluminescent **polarizers**  
 based on melt-processed polymer blends)  
 IT 25087-34-7  
 (310R; ultra-high performance photoluminescent **polarizers**  
 based on melt-processed polyethylene blends)  
 IT 26221-73-8, Ethylene-1-octene copolymer  
 (linear low-d.; ultra-high performance photoluminescent  
**polarizers** based on melt-processed polymer blends)  
 IT 1849-27-0, 1,4-Bis(phenylethynyl)benzene  
 (ultra-high performance photoluminescent **polarizers**  
 based on melt-processed polyethylene blends with)  
 IT 174592-87-1 248590-34-3  
 (ultra-high performance photoluminescent **polarizers**  
 based on melt-processed polyethylene blends with)  
 IT 9002-88-4, HD 8621  
 (ultra-high performance photoluminescent **polariz rs**  
 based on melt-processed polymer blends)

- 129:137362 Iron borates as base generators and curable compositions containing them and cured products therefrom. Toba, Yasumasa (Toyo Ink Mfg. Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 10168092 A2 19980623 Heisei, 18 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1996-328066 19961209.
- AB The curable compns. comprise (A)  $\text{LnFe3+.3BAr3R-}$  [I; L = ligand from  $\text{NH}_3$ , pyridine, imidazole, ethylenediamine, trimethylenediamine, tetraethylenediamine, hexamethylenediamine, propylenediamine, 1,2-cyclohexanediamine, N,N-diethylethylenediamine, and/or diethylenetriamine;  $n = 2-6$ ; Ar = C6-18 monocyclic or polycyclic aryl group optionally substituted with F, Cl, Br, OH, carboxy, mercapto, cyano, nitro, azido groups; R = C1-18 linear, branched, or cyclic alkyl groups optionally substituted with F, Cl, Br, OH, carboxy, mercapto, cyano, nitro, or azido groups] as base generators, (B) sensitizers, and (C) base-curable compds. or (D) radically polymerizable compds. and are useful for coatings, polymer moldings, sealants, inks, and photoresists. Thus, 1.38 parts hexaammineiron (III) chloride was treated with 5.0 parts Li butyltriphenyl borate to give I (L =  $\text{NH}_3$ ,  $n = 6$ , Ar = Ph, R = Bu), 3 parts of which were mixed with 100 parts pentaerythritol triacrylate and 0.5 part 4,4'-diethylaminobenzophenone, applied to Fe plate, and cured by UV rays to give a coating exhibiting no corrosion on exposure of the coated plate to outdoors for 1 mo.
- IT 10075-85-1, 9,10-Bis(phenylethynyl)anthracene  
(photosensitizer; iron borates as base generators for curable compns.)
- RN 10075-85-1 HCA
- CN Anthracene, 9,10-bis(phenylethynyl)- (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



- IC ICM C07F015-02  
ICS C08F002-50
- CC 42-10 (Coatings, Inks, and Related Products)  
Section cross-reference(s): 38, 74
- IT **Coating materials**  
(anticorrosive; iron borates as base generators and curable compns. contg. them and cured products therefrom)
- IT **Coating materials**  
Inks  
Photoresists  
Sealing compositions  
(iron borates as base generators and curable compns. contg. them)

and cured products therefrom)

IT 65-61-2, Acridine orange 90-93-7, 4,4'-Diethylaminobenzophenone  
120-12-7, Anthracene, uses 448-61-3, 2,4,6-Triphenylpyrylium  
tetrafluoroborate 492-22-8, Thioxanthone 781-43-1,  
9,10-Dimethylantracene 917-23-7, Tetraphenylporphyrin  
1499-10-1, 9,10-Diphenylantracene 1564-64-3, 9-Bromoanthracene  
1582-78-1 2390-54-7, Setoflavin T 6285-94-5 6359-38-2,  
Benzoflavin 10075-85-1, 9,10-Bis(phenylethynyl)anthracene  
11121-48-5, Rose Bengal 17372-87-1, Eosin Y 25470-94-4  
38215-36-0, 3-(2-Benzothiazolyl)-7-(diethylamino)coumarin  
40442-45-3 63226-13-1, 3,3'-Carbonylbis[7-(diethylamino)coumarin]  
80034-24-8, 1,8-Dimethoxy-9,10-bis(phenylethynyl)anthracene  
(photosensitizer; iron borates as base generators for curable  
compns.)

L22 ANSWER 10 OF 16 HCA COPYRIGHT 2003 ACS on STN

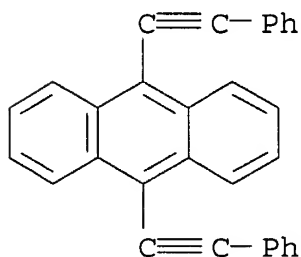
129:123884 Base generators and curable compositions and cured products  
using the same. Toba, Yasumasa (Toyo Ink Mfg. Co., Ltd., Japan).  
Jpn. Kokai Tokkyo Koho JP 10152548 A2 19980609 Heisei, 18 pp.  
(Japanese). CODEN: JKXXAF. APPLICATION: JP 1996-313288 19961125.

AB The title base generators having excellent soly., stability and  
energy beam sensitivity are  $\text{LnCo}_3 + .3\text{BAr}_3\text{R}$ - [L = ligand(s) chosen  
from ammonia, pyridine, imidazole, ethylenediamine,  
trimethylenediamine, tetramethylenediamine, hexamethylenediamine,  
propylenediamine, 1,2-cyclohexanediamine, N,N-  
diethylethylenediamine, and diethylenetriamine; n = 2-6; Ar = C6-18  
mono- or condensed polynuclear aryl group with or without  
substituent(s) chosen from F, Cl, Br, OH, carboxy, SH, cyano, nitro,  
azido group; R = C1-18 linear, branched, or cycloalkyl group with or  
without substituent(s) chosen from F, Cl, Br, OH, carboxy, SH,  
cyano, nitro, azido group]. A compn. from 3 parts  
hexamminecobalt(III)tris(triphenylbutylborate) and 100 parts  
pentaerythritol triacrylate was coated on an iron plate and  
UV-irradiated to give an anticorrosive coating.

IT 10075-85-1, 9,10-Bis(phenylethynyl)anthracene  
(base generators and curable compns. and cured products using the  
same)

RN 10075-85-1 HCA

CN Anthracene, 9,10-bis(phenylethynyl)- (6CI, 7CI, 8CI, 9CI) (CA INDEX  
NAME)



IC ICM C08G059-68

ICS C07F015-06; C08F012-00; C08F016-00; C08F018-00; C08F020-00;  
C08F034-00; C09K003-00

CC 42-10 (Coatings, Inks, and Related Products)

IT **Coating materials**  
(anticorrosive; base generators and curable compns. and cured products using the same)

IT **Coating materials**  
(photocurable; base generators and curable compns. and cured products using the same)

IT 65-61-2, Acridine orange 90-93-7, 4,4'-Diethylaminobenzophenone  
120-12-7, Anthracene, uses 448-61-3, 2,4,6-Triphenylpyrylium  
tetrafluoroborate 492-22-8, Thioxanthone 529-85-1,  
9-Fluoroanthracene 781-43-1, 9,10-Dimethylantracene 917-23-7,  
Tetraphenylporphyrin 1499-10-1, 9,10-Diphenylantracene  
1582-78-1 2390-54-7, Setoflavin T 6285-94-5 6359-38-2,  
Benzoflavin 10075-85-1, 9,10-Bis(phenylethynyl)anthracene  
11121-48-5, Rose bengal 17372-87-1, Eosine Y 25470-94-4  
38215-36-0, 3-(2-Benzothiazolyl)-7-(diethylamino)coumarin  
40442-45-3 63226-13-1, 3,3'-Carbonylbis[7-(diethylamino)coumarin]  
80034-24-8, 1,8-Dimethoxy-9,10-bis(phenylethynyl)anthracene  
209972-17-8 209972-18-9 209972-19-0 209972-20-3 209972-21-4  
209972-22-5 209972-23-6 209972-24-7 209972-26-9 209972-27-0  
209972-29-2 209972-31-6 209972-33-8 209972-35-0 209972-36-1  
209972-39-4 209972-42-9 209972-45-2 209972-48-5 209972-51-0  
209972-53-2 209972-55-4 209972-58-7 209972-61-2 209972-62-3  
(base generators and curable compns. and cured products using the same)

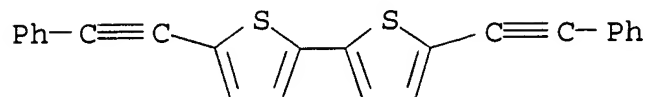
L22 ANSWER 11 OF 16 HCA COPYRIGHT 2003 ACS on STN

129:10062 Neutral excitons and metastable charged polarons in  
5,5'-bis(2-phenylethynyl)-2,2'-bithienyl. Kim, Y. H.; Deng, T.-Z.;  
Feng, B.-H.; Nie, Y.-X.; Zhao, Z.-X.; Zimmer, Hans; Sudsuansri, K.  
(Institute of Physics, Chinese Academy of Sciences, Beijing, 100080,  
Peop. Rep. China). Physical Review B: Condensed Matter and  
Materials Physics, 57(15), 9336-9342 (English) 1998. CODEN: PRBMDO.  
ISSN: 0163-1829. Publisher: American Physical Society.

AB We have carried out steady-state photoinduced IR-absorption  
measurements on the newly synthesized org. mol. 5,5'-bis-(2-  
phenylethynyl)-2,2'-bithienyl (PhEtBT). We have found that the  
dominant elementary excitations in PhEtBT are Wannier-type neutral  
excitons formed between electrons and holes strongly localized in  
adjacent intramol. or intermol. C.tplbond.C sites. We obsd. that  
charge carriers which do not undergo direct radiative recombination  
are self-localized by forming metastable charged polarons. We have  
obsd. two different charge distributions on the polaron site; one is  
polaron-like for T<120 K, and the other is bipolaron-like at T>120  
K. We suggest that the charge trap centers are provided by the  
large **polarizability** of the localized .pi.' dimers in the  
C.tplbond.C site.

IT 115257-02-8, 5,5'-Bis(2-phenylethynyl)-2,2'-bithienyl  
(neutral excitons and metastable charged polarons in  
bis(phenylethynyl)bithienyl)

RN 115257-02-8 HCA  
 CN 2,2'-Bithiophene, 5,5'-bis(phenylethynyl)- (9CI) (CA INDEX NAME)



CC 73-3 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

Section cross-reference(s): 28

IT 115257-02-8, 5,5'-Bis(2-phenylethynyl)-2,2'-bithienyl  
 (neutral excitons and metastable charged polarons in  
 bis(phenylethynyl)bithienyl)

L22 ANSWER 12 OF 16 HCA COPYRIGHT 2003 ACS on STN

128:147502 Energy beam-sensitive activator composition containing onium borate complex acid generator and base generator and curable, positively working, or imaging composition containing it. Toba, Taisei; Tanaka, Yasuhiro; Yasuike, Madoka (Toyo Ink Mfg. Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 10007709 A2 19980113 Heisei, 53 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1996-162782 19960624.

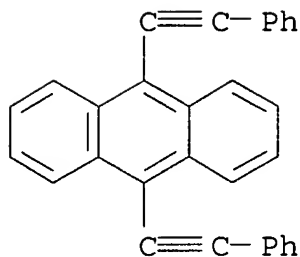
AB The activator compn. contains an energy beam-sensitive acid generator comprising a complex of an onium cation and a borate anion [BYmZn]- (Y = F, Cl; Z = Ph substituted with .gtoreq.2 electron-withdrawing groups selected from F, cyano, NO<sub>2</sub>, and CF<sub>3</sub>; m = 0-3; n = 1-4; m + n = 4), an energy beam-sensitive base generator, and optionally a sensitizer. The curable compn. contains the above activator compn., an acid-curable compd., and a base-curable compd. The pos.-working compn. comprises the above acid generator compn. and a compd. changing affinity or soly. to a developer by an acid-catalyzed reaction. The imaging compn. comprises the above acid generator compn. and a pigment precursor which colors by reaction with an acid. The activator compn. is applicable for moldings, sealings, resists, inks, coatings, adhesives, dental fillings, printing plates, and holog. recording materials, etc. The acid generator shows improved sensitivity.

IT 10075-85-1, 9,10-Bis(phenylethynyl)anthracene  
 (sensitizer; curable, pos.-working, or imaging compns. contg.  
 onium borate complex energy beam-sensitive activator)

RN 10075-85-1 HCA

CN Anthracene, 9,10-bis(phenylethynyl)- (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)

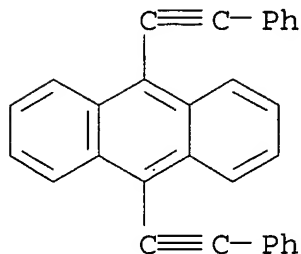




- IC ICM C08F004-12  
ICS C08G008-00; C08G012-00; C08G059-72; C08G063-08; C08G065-00;  
C08G069-20; C08G073-00; C08G075-00; C08G077-08; C08G085-00;  
G03F007-004; G03F007-029
- CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and  
Other Reprographic Processes)  
Section cross-reference(s): 38, 42
- IT **Coating materials**  
(photocurable; curable, pos.-working, or imaging compns. contg.  
onium borate complex energy beam-sensitive activator)
- IT 65-61-2, Acridine Orange 120-12-7, Anthracene, uses 781-43-1,  
9,10-Dimethylantracene 1499-10-1, 9,10-Diphenylantracene  
1564-64-3, 9-Bromoanthracene 2390-54-7, Setoflavin T 6359-38-2,  
Benzoflavin 10075-85-1, 9,10-Bis(phenylethynyl)anthracene  
80034-24-8, 1,8-Dimethoxy-9,10-bis(phenylethynyl)anthracene  
(sensitizer; curable, pos.-working, or imaging compns. contg.  
onium borate complex energy beam-sensitive activator)
- L22 ANSWER 13 OF 16 HCA COPYRIGHT 2003 ACS on STN
- 128:128759 Radiation-sensitive acid generator compositions, curable  
compositions, positively working compositions, and image recording  
compositions thereof. Toba, Yasumasa; Tanaka, Yasuhiro; Yasuie,  
Madoka; Ichimura, Kunihiro (Toyo Ink Mfg. Co., Ltd., Japan). Jpn.  
Kokai Tokkyo Koho JP 10001508 A2 19980106 Heisei, 51 pp.  
(Japanese). CODEN: JKXXAF. APPLICATION: JP 1996-155068 19960617.
- AB The acid generator compns. contain (A) radiation-sensitive acid  
generators comprising complexes of onium cations and borate anions  
[BYmZn]- (Y = F, Cl; Z = Ph which is substituted with .gtoreq.2  
electron-accepting groups selected from F, CN, NO2, and CF3; m =  
0-3; n = 1-4; m + n = 4), (B) agents which breed acids by reacting  
with the acids from A, and optionally (C) sensitizers. The  
pos.-working compns. are composed of the acid generator compns. and  
(D) acid-curable compds or (E) compds. which become more affinitive  
or sol. to developers by reactions using acidic catalysts. The  
image recording compns. are composed of the acid generator compds.  
and (F) pigment precursors which are colored by reacting with the  
generated acids. Application to moldings, sealings, resists, inks,  
coatings, adhesives, copying machines, and printers is indicated.  
Thus, an Al plate was coated with a compn. comprising  
dimethylphenacylsulfonium tetrakis(pentafluorophenyl)borate 3,  
p-MeC6H4O3SOCH2CMe(OCMe)CO2CMe3 3, and Bakelite ERL 4221 100 parts

and exposed to UV to give a tack-free coating.

- IT 10075-85-1, 9,10-Bis(phenylethynyl)anthracene  
(sensitizer; radiation-sensitive catalyst compns. contg.  
onium-borate complexes and promoters and their pos.-working and  
image recording compns.)
- RN 10075-85-1 HCA
- CN Anthracene, 9,10-bis(phenylethynyl)- (6CI, 7CI, 8CI, 9CI) (CA INDEX  
NAME)



- IC ICM C08F004-12
- ICS C08G008-00; C08G012-00; C08G059-72; C08G063-08; C08G065-00;  
C08G069-20; C08G073-00; C08G075-00; C08G077-08; C08G085-00;  
G03F007-004; G03F007-029
- CC 37-6 (Plastics Manufacture and Processing)  
Section cross-reference(s): 35, 38, 42, 67, 74
- IT **Coating materials**  
(photocurable; radiation-sensitive catalyst compns. contg.  
onium-borate complexes and promoters and their pos.-working and  
image recording compns.)
- IT 65-61-2, Acridine Orange 120-12-7, Anthracene, uses 781-43-1,  
9,10-Dimethylantracene 1499-10-1, 9,10-Diphenylantracene  
1564-64-3, 9-Bromoanthracene 2390-54-7, Setoflavin T 6359-38-2,  
Benzoflavin 10075-85-1, 9,10-Bis(phenylethynyl)anthracene  
80034-24-8, 1,8-Dimethoxy-9,10-bis(phenylethynyl)anthracene  
(sensitizer; radiation-sensitive catalyst compns. contg.  
onium-borate complexes and promoters and their pos.-working and  
image recording compns.)
- L22 ANSWER 14 OF 16 HCA COPYRIGHT 2003 ACS on STN
- 128:49509 Silsesquioxane polymers and manufacture thereof and hard coats  
and heat-resistant materials therefrom. Kobayashi, Toshiaki;  
Hayashi, Teruyuki; Tanaka, Masato (Agency of Industrial Sciences and  
Technology, Japan). Jpn. Kokai Tokkyo Koho JP 09296043 A2 19971118  
Heisei, 7 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP  
1997-52660 19970307. PRIORITY: JP 1996-80840 19960308.
- AB Sol. and heat-resistant polymers are prepd. from  
pentacyclo[9.5.1.13,9.15,15.17,13]octasiloxane (I) and  
bis(substituted ethynyl) compds. by hydrosilylation polymn. Thus,  
424 mg I, 278 mg 1,3-bis(phenylethynyl)benzene, 100 mL toluene, and  
a Pt divinylsiloxane soln. were stirred to prep. a polymer.
- IT 199869-68-6P  
(silsesquioxane polymers for hard coats and heat-resistant

materials)

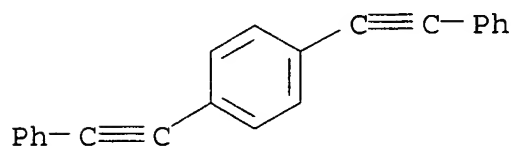
RN 199869-68-6 HCA

CN Pentacyclo[9.5.1.13,9.15,15.17,13]octasiloxane, polymer with  
1,4-bis(phenylethynyl)benzene (9CI) (CA INDEX NAME)

CM 1

CRN 1849-27-0

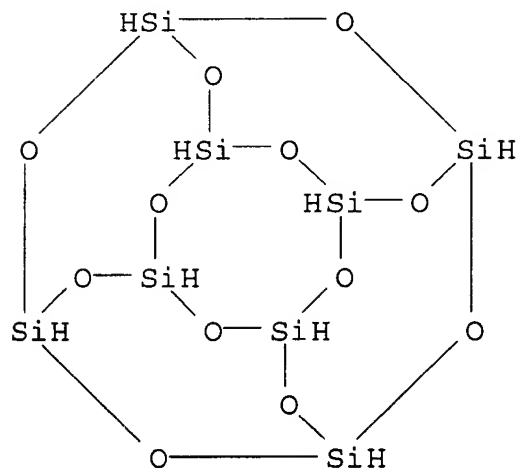
CMF C22 H14



CM 2

CRN 281-50-5

CMF H8 O12 Si8



IT 199869-66-4P

(silsesquioxane polymers for hard coats and heat-resistant  
materials)

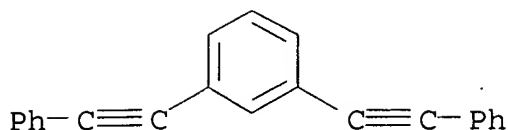
RN 199869-66-4 HCA

CN Pentacyclo[9.5.1.13,9.15,15.17,13]octasiloxane, polymer with  
1,3-bis(phenylethynyl)benzene (9CI) (CA INDEX NAME)

CM 1

CRN 13141-36-1

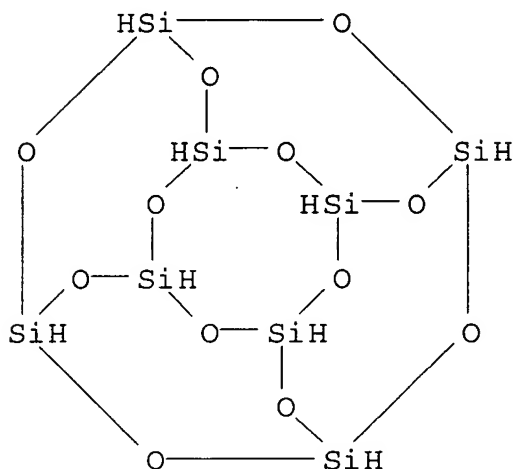
CMF C22 H14



CM 2

CRN 281-50-5

CMF H8 O12 Si8



IC ICM C08G077-12

ICS C08G077-04; C08G077-50; C09D183-04; C09D183-05

CC 42-10 (Coatings, Inks, and Related Products)

IT **Coating materials**

(heat-resistant; silsesquioxane polymers for hard coats and heat-resistant materials)

IT 199869-68-6P 199869-69-7P 199869-70-0P 199869-71-1P

(silsesquioxane polymers for hard coats and heat-resistant materials)

IT 199869-66-4P

(silsesquioxane polymers for hard coats and heat-resistant materials)

L22 ANSWER 15 OF 16 HCA COPYRIGHT 2003 ACS on STN

124:246891 Tolane oligomers: model thermotropic liquid crystals. Twieg, Robert J.; Chu, Vano; Nguyen, Cattien; Dannels, Christine M.; Viney, Christopher (IBM Almaden Res. Cent., San Jose, CA, 95120, USA). Liquid Crystals, 20(3), 287-92 (English) 1996. CODEN: LICRE6. ISSN: 0267-8292. Publisher: Taylor & Francis.

AB The liq. cryst. phases of several rigid-rod, nonpolar tolane oligomers were characterized by DSC and transmitted **polarized** light microscopy. A stable nematic phase can be formed at ambient pressure if the mol. axial ratio (length-to-width

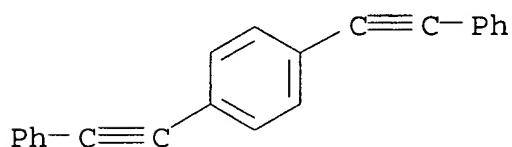
ratio) is  $>4.5$ . A smectic phase forms in addn. to the nematic phase if the axial ratio exceeds 6.1. Sym. fluorination of the terminal Ph groups reveals that the liq. cryst. phase behavior of these rigid rods is highly sensitive to perturbations of the charge distribution along the mols. Nematic tolane oligomers can exhibit high strength disclinations ( $s = .+-.3/2$  and  $.+-.2$ ) in their schlieren textures, and the authors discuss conditions that promote the stability of these defects.

IT 1849-27-0 53304-21-5

(liq. crystal phase behavior of)

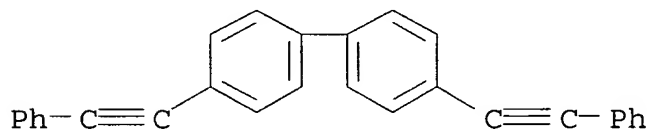
RN 1849-27-0 HCA

CN Benzene, 1,4-bis(phenylethynyl)- (9CI) (CA INDEX NAME)



RN 53304-21-5 HCA

CN 1,1'-Biphenyl, 4,4'-bis(phenylethynyl)- (9CI) (CA INDEX NAME)



CC 75-11 (Crystallography and Liquid Crystals)

IT 1849-27-0 21326-80-7 53304-21-5 133685-24-2

146296-39-1

(liq. crystal phase behavior of)

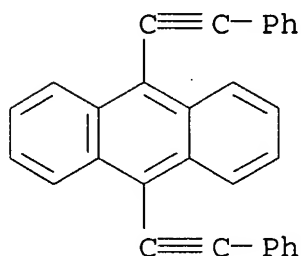
L22 ANSWER 16 OF 16 HCA COPYRIGHT 2003 ACS on STN

123:20886 How do molecules move near  $T_g$ ? Molecular rotation of six probes in o-terphenyl across 14 decades in time. Cicerone, Marcus T.; Blackburn, F. R.; Ediger, M. D. (Dept. of Chemistry, University of Wisconsin-Madison, Madison, WI, 53706, USA). Journal of Chemical Physics, 102(1), 471-9 (English) 1995. CODEN: JCPSA6. ISSN: 0021-9606. Publisher: American Institute of Physics.

AB Time resolved optical spectroscopy was used to observe mol. rotation over more than 14 decades in time for six probes in o-terphenyl (OTP). In contrast to previous studies, probe rotation times are found to depend significantly upon probe size in the deeply supercooled regime. Systematic deviations from the temp. dependence of the Debye-Stokes-Einstein equation are obsd., however, these deviations are relatively small. These observations are inconsistent with some models of cooperative mol. motion near  $T_g$  which invoke rigid aggregates or locally liquidlike regions. The width of the relaxation spectrum (characterized by the KWW .beta. parameter) systematically decreases with increasing probe size.

Near Tg, the largest probe (rubrene) rotates with nearly a single exponential correlation function. Based on the obsd. trend in  $\beta$ , it is estd. that OTP is homogeneous on length scales greater than 2.5 nm at Tg.

IT 10075-85-1, 9,10-Bis(phenylethynyl)anthracene  
(in study of mol. rotation rear Tg in terphenyl)  
RN 10075-85-1 HCA  
CN Anthracene, 9,10-bis(phenylethynyl)- (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)  
ST mol rotation glass transition terphenyl; supercooled liq mol rotation terphenyl; fluorescence **polarization** spectroscopy  
mol rotation terphenyl  
IT Fluorescence  
(**polarized**, near Tg in terphenyl)  
IT 92-24-0, Naphthacene 120-12-7, Anthracene, properties 517-51-1, Rubrene 1499-10-1, 9,10-Diphenylanthracene 4584-57-0, 4,4'-(Dimethylamino) nitrostilbene 10075-85-1, 9,10-Bis(phenylethynyl)anthracene  
(in study of mol. rotation rear Tg in terphenyl)

=> d 123 1-10 cbib abs hitstr hitind

L23 ANSWER 1 OF 10 HCA COPYRIGHT 2003 ACS on STN

138:245129 Degenerate four-wave mixing measurements of the third-order nonlinearity of poly(aryleneethynylenes) and their model substances. Hotzel, Mario; Urban, Sabine; Egbe, Daniel Ayuk Mbi; Pautzsch, Thomas; Klemm, Elisabeth (Institut für Optik und Quantenelektronik der Friedrich-Schiller-Universität Jena, Jena, 07743, Germany). Journal of the Optical Society of America B: Optical Physics, 19(11), 2645-2649 (English) 2002. CODEN: JOBPDE. ISSN: 0740-3224. Publisher: Optical Society of America.

AB The  $|n_2|$  of poly(aryleneethynylenes), a novel class of conjugated polymers, their derivs., and model substances was studied by time-resolved degenerate four-wave mixing. The measurements were performed in solns. at 1047 nm with picosecond time resolu. and on thin films at 800 nm with femtosecond time resolu. A time response of the nonlinearities faster than the pulse durations used was found. The  $|n_2|$  values of  $\sim 4.9 \times 10^{-13} \text{ cm}^2/\text{W}$  were

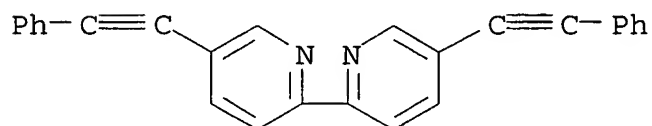
measured on thin films of the polymers.

IT 219754-96-8

(degenerate four-wave mixing measurements of third-order nonlinearity of poly(aryleneethynylenes) and their model substances)

RN 219754-96-8 HCA

CN 2,2'-Bipyridine, 5,5'-bis(phenylethynyl)- (9CI) (CA INDEX NAME)



CC 73-10 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

Section cross-reference(s): 36

IT Degenerate four wave mixing

Third-order nonlinear **optical** properties

(degenerate four-wave mixing measurements of third-order nonlinearity of poly(aryleneethynylenes) and their model substances)

IT 219754-96-8 219755-01-8 244761-51-1 244761-53-3

244761-57-7 271251-01-5 406724-85-4 406724-86-5

(degenerate four-wave mixing measurements of third-order nonlinearity of poly(aryleneethynylenes) and their model substances)

L23 ANSWER 2 OF 10 HCA COPYRIGHT 2003 ACS on STN

138:239379 Light emitting diode excitation emission matrix fluorescence spectroscopy. Hart, Sean J.; JiJi, Renee D. (Naval Research Laboratory, Chemistry Division, Biological Chemistry, Washington, DC, 20375, USA). Analyst (Cambridge, United Kingdom), 127(12), 1693-1699 (English) 2002. CODEN: ANALAO. ISSN: 0003-2654. Publisher: Royal Society of Chemistry.

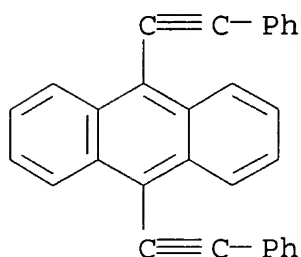
AB An excitation emission matrix (EEM) fluorescence instrument has been developed using a linear array of light-emitting diodes (LED). The wavelengths **covered** extend from the upper UV through the visible spectrum: 370-640 nm. Using an LED array to excite fluorescence emission at multiple excitation wavelengths is a low-cost alternative to an expensive high power lamp and imaging spectrograph. The LED-EEM system is a departure from other EEM spectroscopy systems in that LEDs often have broad excitation ranges which may overlap with neighboring channels. The LED array can be considered a hybrid between a spectroscopic and sensor system, as the broad LED excitation range produces a partially selective **optical** measurement. The instrument has been tested and characterized using fluorescent dyes: limits of detection for 9,10-bis(phenylethynyl)-anthracene and rhodamine B were in the mid parts-per-trillion range; detection limits for the other compds. were in the low parts-per-billion range (<5 ppb). The LED-EEMs were analyzed using parallel factor anal., which allowed the math.

resoln. of the individual contributions of the mono- and dianion fluorescein tautomers a priori. Correct identification and quantitation of six fluorescent dyes in two to six component mixts. (concns. between 12.5 and 500 ppb) has been achieved with root mean squared errors of prediction of less than 4.0 ppb for all components.

IT 10075-85-1, 9,10-Bis(phenylethynyl)anthracene  
(dye; light emitting diode excitation emission matrix fluorescence spectroscopy of)

RN 10075-85-1 HCA

CN Anthracene, 9,10-bis(phenylethynyl)- (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



CC 41-1 (Dyes, Organic Pigments, Fluorescent Brighteners, and Photographic Sensitizers)  
Section cross-reference(s): 73, 80

IT 81-88-9, Rhodamine B 477-73-6, Safranin O 2321-07-5, Fluorescein 7385-67-3, Nile Red 10075-85-1, 9,10-Bis(phenylethynyl)anthracene 28351-02-2, Diphenylanthracene (dye; light emitting diode excitation emission matrix fluorescence spectroscopy of)

L23 ANSWER 3 OF 10 HCA COPYRIGHT 2003 ACS on STN

131:59291 Solid-State Structures of Phenyleneethynylenes: Comparison of Monomers and Polymers. Bunz, Uwe H. F.; Enkelmann, Volker; Kloppenburg, Lioba; Jones, David; Shimizu, Ken D.; Claridge, John B.; zur Loye, Hans-Conrad; Lieser, Guenter (Department of Chemistry and Biochemistry, The University of South Carolina, Columbia, SC, 29208, USA). Chemistry of Materials, 11(6), 1416-1424 (English) 1999. CODEN: CMATEX. ISSN: 0897-4756. Publisher: American Chemical Society.

AB The solid-state structures of a series of 2,5-dialkyl-substituted poly(p-phenyleneethynylene)s (PPEs 4, R = hexyl, dodecyl, isopentyl, ethylbutyl, ethylhexyl, H) and of 2,5-didodecyl(1,4-phenylenebutadiynylene) were investigated by X-ray powder and electron diffraction. In addn., X-ray single-crystal structures of the monomeric (1,4-dipropynyl-2,5-dialkyl)benzenes were obtained and compared to the structures of the corresponding polymers. In the case of the ethylhexyl-substituted PPE, the packing of the monomer resembles that of the polymer in the solid state. All of the examd. PPEs show lamellar morphologies, in which the extended geometry of the side chains det. the value of



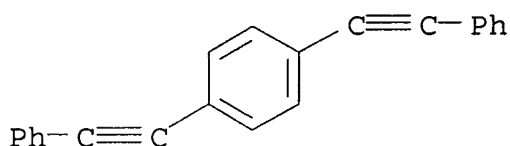
the **lamellar** spacing obtained by powder **diffraction**. A second d value, which could be obtained for all samples represents the .pi.-.pi.-stacking distance of the main chains. This distance is around 3.8 .ANG., a typical value for stacking of arom. systems. It implies strong electronic interaction of the chromophoric backbones, leading to the obsd. sharp aggregate band in CHCl<sub>3</sub>/MeOH solns. and in thin **films**. From the scattering data, staggered packing of the benzene rings and the phenyleneethynylene main chains in PPEs 4 was inferred. This packing avoids repulsive electrostatic interactions between adjacent conjugated phenyleneethynylene chains and at the same time leads to optimal packing of the side chains.

IT 1849-27-0

(comparative study on the solid-state structures of monomers and polymers based on phenyleneethynylenes)

RN 1849-27-0 HCA

CN Benzene, 1,4-bis(phenylethynyl)- (9CI) (CA INDEX NAME)



CC 36-2 (Physical Properties of Synthetic High Polymers)  
Section cross-reference(s): 75

IT Polymer morphology

(**lamellar**; comparative study on the solid-state structures of monomers and polymers based on phenyleneethynylenes)

IT 1849-27-0 188781-64-8 211809-61-9 211809-64-2  
211809-71-1 211809-74-4 219628-02-1 219628-06-5 225512-44-7  
227962-17-6 227962-18-7 227962-20-1 227962-22-3 227962-24-5  
(comparative study on the solid-state structures of monomers and polymers based on phenyleneethynylenes)

L23 ANSWER 4 OF 10 HCA COPYRIGHT 2003 ACS on STN

130:110709 Preparation of new rigid backbone conjugated organic polymers with large fluorescence quantum yields. Egbe, Daniel Ayuk Mbi; Klemm, Elisabeth (Institut Organische Chemie Makromolekulare Chemie, Friedrich-Schiller-Universitaet, Jena, D-07743, Germany). Macromolecular Chemistry and Physics, 199(12), 2683-2688 (English) 1998. CODEN: MCHPES. ISSN: 1022-1352. Publisher: Wiley-VCH Verlag GmbH.

AB Palladium-catalyzed cross-coupling reactions between 5,5'-dibromo-2,2'-bipyridine and substituted phenyldiacetylenes provide a novel family of rigid backbone conjugated polymers. The wt.-av. mol. wt. detd. by GPC, polystyrene stds., .hivin.Mw was 23,350 and 13,460 g .cntdot. mol-1, with a polydispersity index of 2.7 and 1.9, resp. The highly luminescent polymers exhibit excellent soly. and can readily be processed into transparent

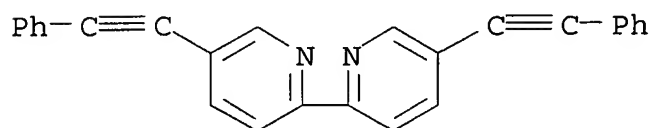
films. Two model compds. show a fluorescence quantum yield close to unity.

IT 219754-96-8P

(model compd.; prepn. and cross-coupling polymn. of bromobipyridine and phenylacetylene monomers)

RN 219754-96-8 HCA

CN 2,2'-Bipyridine, 5,5'-bis(phenylethynyl)- (9CI) (CA INDEX NAME)



CC 35-7 (Chemistry of Synthetic High Polymers)

IT Fluorescence

Optical absorption

(prepn. by cross-coupling polymn. of bromobipyridines and phenylacetylene and optic properties of conjugated polyacetylenes)

IT Polyacetylenes, preparation

(prepn. by cross-coupling polymn. of bromobipyridines and phenylacetylene and optic properties of conjugated polyacetylenes)

IT 536-74-3P, Phenylacetylene 219754-96-8P 219755-01-8P

(model compd.; prepn. and cross-coupling polymn. of bromobipyridine and phenylacetylene monomers)

IT 219754-97-9P 219754-98-0P 219754-99-1P 219755-00-7P

(prepn. by cross-coupling polymn. of bromobipyridines and phenylacetylene and optic properties of conjugated polyacetylenes)

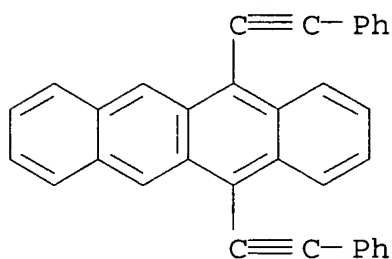
L23 ANSWER 5 OF 10 HCA COPYRIGHT 2003 ACS on STN

129:195721 Holographic recording properties in thick films of ULSH 500 photopolymer. Waldman, D. A.; Li, H. -Y. S.; Cetin, E. A. (Polaroid Corporation 750M-5C, Cambridge, MA, 02139, USA). Proceedings of SPIE-The International Society for Optical Engineering, 3291 (Diffraction and Holographic Device Technologies and Applications V), 89-103 (English) 1998. CODEN: PSISDG. ISSN: 0277-786X. Publisher: SPIE-The International Society for Optical Engineering.

AB The photopolymer holog. recording material, ULSH 500, based upon cationic ring-opening polymn., has been further optimized for recording in an increased film thickness of 200 .mu.m. The dynamic range attained, at least M/# = 16, is substantially greater than previously reported, while concurrently the inherent low transverse shrinkage and high sensitivity characteristics of the material have been retained. Dynamic range or cumulative grating strength, .SIGMA..eta.i0.5, has been detd. from co-locationally recorded peritrophic and angle multiplexed plane-wave gratings which exhibit low diffraction efficiencies between about 0.1 and 0.2 %. Good Bragg selectivity consistent with the imaged thickness

is obsd. for the multiplexed holograms, and both the angular response and the **diffraction** efficiency are stable without the need for post-imaging fixing procedures. Sensitivity is in the range of 1 to 10 cm/mJ, and the **refractive** index modulation achievable during consumption of the accessible dynamic range is  $n_1 = 1.3 \times 10^{-2}$  at the read wavelength of 514.5 nm.

- IT 18826-29-4, 5,12-Bis(phenylethynyl)naphthacene  
(sensitizer; holog. recording properties in thick **films**  
of ULSH 500 photopolymer)
- RN 18826-29-4 HCA
- CN Naphthacene, 5,12-bis(phenylethynyl)- (8CI, 9CI) (CA INDEX NAME)

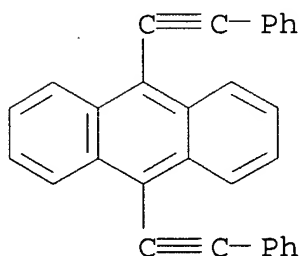


- CC 74-8 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
- IT Holographic recording materials  
(holog. recording properties in thick **films** of ULSH 500 photopolymer)
- IT Polysiloxanes, processes  
(holog. recording properties in thick **films** of ULSH 500 photopolymer)
- IT 121225-97-6, Polyset PC 1000  
(Polyset PC 1000; holog. recording properties in thick **films** of ULSH 500 photopolymer)
- IT 3390-61-2, 1,3,5-Trimethyl-1,1,3,5,5-pentaphenyltrisiloxane  
(binder; holog. recording properties in thick **films** of ULSH 500 photopolymer)
- IT 106-86-5D, 3-Vinyl-7-oxabicyclo[4.1.0]heptane, reaction product with trimethylsilyl-terminated polymethylhydrosiloxane 26403-67-8D, PS-120, reaction product with 3-Vinyl-7-oxabicyclo[4.1.0]heptane 49718-23-2D, Methylsilanediol homopolymer, trimethylsilyl-terminated; reaction products with 3-Vinyl-7-oxabicyclo[4.1.0]heptane 127441-54-7 153699-26-4 192777-33-6, ULSH-500  
(holog. recording properties in thick **films** of ULSH 500 photopolymer)
- IT 18826-29-4, 5,12-Bis(phenylethynyl)naphthacene  
(sensitizer; holog. recording properties in thick **films** of ULSH 500 photopolymer)
- L23 ANSWER 6 OF 10 HCA COPYRIGHT 2003 ACS on STN
- 126:349500 Highly fluorescent molecular organic composites for light-emitting diodes. Fatemi, D. J.; Murata, H.; Merrin, C. D.; Kafafi, Z. H. (U.S. Naval Research Laboratory, Washington, DC,



20375, USA). Synthetic Metals, 85(1-3), 1225-1228 (English) 1997.  
CODEN: SYMEDZ. ISSN: 0379-6779. Publisher: Elsevier.

- AB Org. **films** of tris-(8-hydroxyquinolino) Al (III) and N,N'-diphenyl-N,N'-bis(3-methylphenyl)-1,1-biphenyl-4,4'-diamine doped with highly fluorescent mols. were prepd. by vacuum deposition. **Optical** absorption and photoluminescence spectra of the composites were measured as a function of dopant concn. These **films** were also used as the emitting **layer** in light-emitting diodes, where their electroluminescence spectra were studied as a function of dopant concn. Color tunability from the blue-green to the red-orange based on variation in the fluorescent mol. and dopant concn. was attained, and quantum efficiencies are enhanced upon doping of the emitter **layer**.
- IT 10075-85-1, 9,10-Bis(phenylethynyl)anthracene (highly fluorescent mol. org. composites for light-emitting diodes contg. aluminum hydroxyquinoline, TPD and bis(phenylethynyl)anthracene or rubrene)
- RN 10075-85-1 HCA
- CN Anthracene, 9,10-bis(phenylethynyl)- (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



- CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
- IT 517-51-1, Rubrene 10075-85-1, 9,10-Bis(phenylethynyl)anthracene (highly fluorescent mol. org. composites for light-emitting diodes contg. aluminum hydroxyquinoline, TPD and bis(phenylethynyl)anthracene or rubrene)
- L23 ANSWER 7 OF 10 HCA COPYRIGHT 2003 ACS on STN  
121:216832 Third-Order Nonlinear **Optical** Properties of Oligomers of Thienyleneethynylenes and Thienylenevinylene. Geisler, Tommy; Petersen, Jan C.; Bjornholm, Thomas; Fischer, Erik; Larsen, Jan; Dehu, Christophe; Bredas, Jean-Luc; Tormos, Gregory V.; Nugara, P. N.; et al. (Danish Institute of Fundamental Metrology, Lyngby, DK-2800, Den.). Journal of Physical Chemistry, 98(40), 10102-11 (English) 1994. CODEN: JPCHAX. ISSN: 0022-3654.
- AB Third-order **optical** nonlinear properties of four thienyleneethynylenes and 2 thienylenevinylenes contg. from 2 to 5 thiophene units were measured. Third-order nonlinear susceptibilities  $\chi^{(3)}$  ( $-3\omega$ ;  $\omega$ ,  $\omega$ ,  $\omega$ ) at the

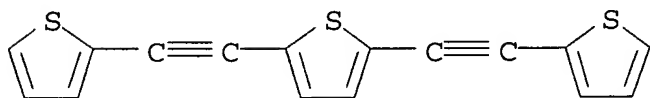
fundamental wavelength of 1064 nm were measured by 3rd harmonic generation (THG) for thin films of the oligomers in poly(Me methacrylate) (PMMA) using the Maker fringe technique. The data were reduced to the equiv. mol. 2nd hyperpolarizabilities  $\gamma(-3\omega; \omega, \omega, \omega)$ . Theor. calcns. of the static (zero-frequency)  $\gamma$  values were performed at the semiempirical Austin model one/finite field (AM1/FF) and intermediate neglect of differential overlap/single and double CI (INDO/SDCI) sum-over-states (SOS) levels and at the nonempirical valence effective Hamiltonian (VEH)-SOS level. The evolution of  $\gamma$  as a function of the torsion angle between the thiophene rings was studied via the AM1/FF method. With the INDO-SOS technique, the frequency dependence of  $\gamma(-3\omega; \omega, \omega, \omega)$  was also analyzed. For the ethynylenes, the exptl. THG values of  $\gamma$  lie 63 times  $10^{-36}$  esu and increase with the no. of heterocycle units of the oligomers. These values are affected by 3-photon resonance. The resonant THG  $\gamma$ -values of the ethynylenes lie within 10% of the corresponding values of the vinylenes. After a simple correction for 3-photon resonance, the dependence of  $\gamma$ -values on the no. of  $\pi$ -electrons is fitted to power laws and compared with the theor. calcns. The theor. static  $\gamma$ -values indicate a higher response in the vinylene derivs. than in the corresponding ethynylene derivs. However, the exptl. THG results provide the reverse trend: this can be explained by a stronger resonance enhancement of the THG  $\gamma$ -values in the ethynylene compds., as is demonstrated by the results of the frequency-dependent calcns.

IT 93297-81-5

(optical nonlinear property of, third-order)

RN 93297-81-5 HCA

CN Thiophene, 2,5-bis(2-thienylethynyl)- (9CI) (CA INDEX NAME)



CC 73-10 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

ST nonlinear optical oligomer thienylenevinylene  
thienyleneethynylene third; UV spectra thienyleneethynylene  
thienylenevinylene oligomer

IT Optical nonlinear property  
(susceptibility, third-order, of oligomers of  
thienyleneethynylenes and thienylenevinylene)

IT Optical nonlinear property  
(third-harmonic generation, of oligomers of thienyleneethynylenes  
and thienylenevinylene)

IT 110-02-1, Thiophene 492-97-7, 2,2'-Bithiophene 1081-34-1,  
2,2':5',2''-Terthiophene 5632-29-1, 2,2':5',2'':5'',2'''-  
Quaterthiophene 5660-45-7 13640-78-3 23975-15-7 26231-77-6

26231-79-8 26231-81-2 26263-68-3 88493-55-4 93297-81-5  
135735-53-4 147298-66-6 147298-69-9  
(optical nonlinear property of, third-order)

L23 ANSWER 8 OF 10 HCA COPYRIGHT 2003 ACS on STN

120:181562 New alkynyl- and vinyl-linked benzo- and aza-crown ether-bipyridyl ruthenium(II) complexes which spectrochemically recognize Group IA and IIA metal cations. Beer, Paul D.; Kocian, Oldrich; Mortimer, Roger J.; Ridgway, Christopher (Inorg. Chem. Lab., Univ. Oxford, Oxford, OX1 3QR, UK). Journal of the Chemical Society, Dalton Transactions: Inorganic Chemistry (1972-1999) (17), 2629-38 (English) 1993. CODEN: JCDTBI. ISSN: 0300-9246.

GI

\* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT \*

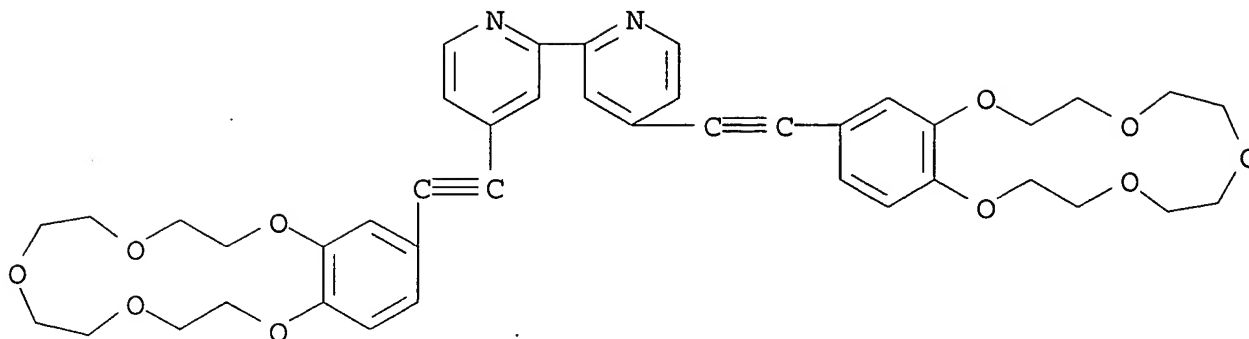
AB A new alkynyl-linked bis(benzo-15-crown-5) bipyridyl ligand I and new mono- and bis-benzo-15-crown-5 and aza-15-crown-5 bipyridyl ligands contg. trans-conjugated olefinic linkages between the crown ethers and the 4,4'-disubstituted 2,2'-bipyridine (bipy) moieties II and III (R = 2,3,5,6,8,9,11,12-octahydro-1,4,7,10,13-benzopentaoxacyclopentadecin-15-yl, p-1,4,7,10-tetraoxa-13-azacyclopentadecan-13-ylphenyl, 3,4-dimethoxyphenyl) were synthesized. The corresponding [RuL(bipy)2][PF6]2 and [RuL3][PF6]2 complexes were prepd. and the latter electropolymd. onto **optically** transparent conducting glass electrodes. Electronic absorption and fluorescence-emission spectroscopic measurements have demonstrated spectrochem. recognition of Group IA and IIA metal cations by the novel functionalized crown ethers both as soln. complexes and as polymeric **films**. The .lambda.max and .epsilon. values for both the low-energy ligand-based .pi.-.pi.\* transition and the metal-to-ligand charge transfer band obsd. for the complexes are sensitive to the binding of Na and Mg cations. The spectral measurements further demonstrate the presence of residual unsatd. linkages in the electropolymd. **films**, providing a technique that could be applied to probe the mechanisms and efficiencies of such electropolyms.

IT 138473-64-0P

(prepn. and reaction of, with ruthenium chloride or bipyridine chloro complex)

RN 138473-64-0 HCA

CN 2,2'-Bipyridine, 4,4'-bis[(2,3,5,6,8,9,11,12-octahydro-1,4,7,10,13-benzopentaoxacyclopentadecin-15-yl)ethynyl]- (9CI) (CA INDEX NAME)



CC 78-7 (Inorganic Chemicals and Reactions)

Section cross-reference(s): 28, 35, 72, 73, 79

IT 138473-64-0P 152333-77-2P 152333-78-3P 152333-79-4P

152333-80-7P 152333-81-8P 152333-82-9P

(prepn. and reaction of, with ruthenium chloride or bipyridine chloro complex)

L23 ANSWER 9 OF 10 HCA COPYRIGHT 2003 ACS on STN

116:47898 Syntheses, coordination, spectroscopy and electropolymerization studies of new alkynyl and vinyl linked benzo- and aza-crown ether-bipyridyl ruthenium(II) complexes. Spectrochemical recognition of Group IA/IIA metal cations. Beer, Paul D.; Kocian, Oldrich; Mortimer, Roger J.; Ridgway, Christopher (Inorg. Chem. Lab., Univ. Oxford, Oxford, OX1 3QR, UK). Journal of the Chemical Society, Chemical Communications (20), 1460-3 (English) 1991. CODEN: JCCCAT. ISSN: 0022-4936.

AB New alkynyl and vinyl linked benzo- and aza-crown ether-bipyridyl ruthenium(II) complexes were prepd. and electropolymd. onto Pt and **optically** transparent conducting glass electrodes to produce novel **films** capable of spectrochem. recognizing alkali and alk. earth metal guest cations.

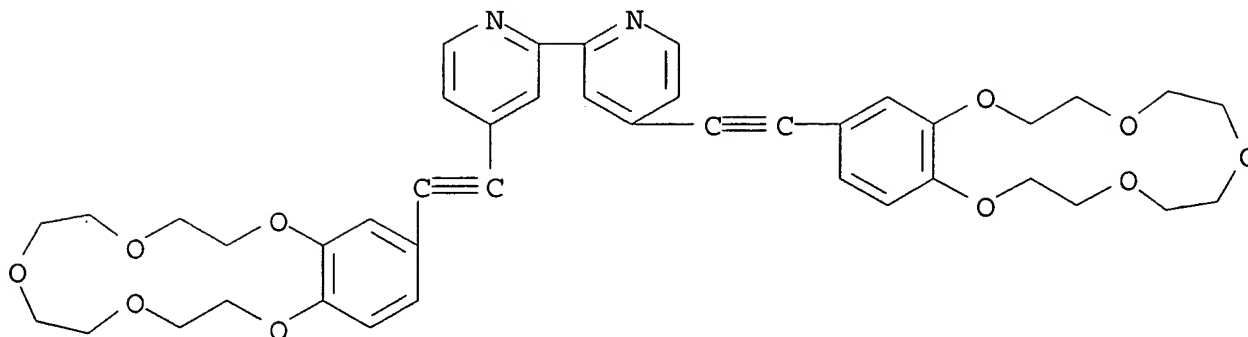
IT 138473-64-0

(ligand, for ruthenium complexation)

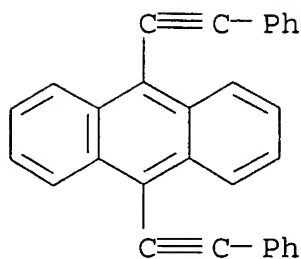
RN 138473-64-0 HCA

CN 2,2'-Bipyridine, 4,4'-bis[(2,3,5,6,8,9,11,12-octahydro-1,4,7,10,13-benzopentaoxacyclopentadecin-15-yl)ethynyl]- (9CI) (CA INDEX NAME)





- CC 72-2 (Electrochemistry)  
Section cross-reference(s): 35, 73, 78
- IT **Optical** absorption  
Ultraviolet and visible spectra  
(of ruthenium complexes contg. alkynyl and vinyl linked benzo- and aza-crown ether-bipyridyl ligands)
- IT **138473-64-0**  
(ligand, for ruthenium complexation)
- L23 ANSWER 10 OF 10 HCA COPYRIGHT 2003 ACS on STN  
96:172240 Index-matched phosphor scintillator structures. Cusano, Dominic A.; Swank, Robert K.; White, Philip J. (General Electric Co., USA). U.S. US 4316817 A 19820223, 7 pp. Cont.-in-part of U.S. Ser. No. 863,876, abandoned. (English). CODEN: USXXAM. APPLICATION: US 1980-169023 19800715. PRIORITY: US 1977-863876 19771223.
- AB Phosphor scintillator structures useful in computerized tomog. and characterized by a superior **optical** output consist of a phosphor embedded or suspended in a polymer matrix. The matrix is **optically** transparent and has a **refraction** index approx. equal to the phosphor **refraction** index at or near the wavelength of the **optical** output of the phosphor. Thus, a mixt. contg. 2-vinylnaphthalene 10, vinyltoluene 3, p-bis[2-(4-methyl-5-phenyloxazolyl)]benzene 63, and perylene 31 mg was introduced to a vessel contg. Eu-doped BaFCl powder 8 g, and thermally polymd. at 60-125.degree..
- IT **10075-85-1**  
(radiog. scintillator structure contg., for computerized tomog.)
- RN 10075-85-1 HCA
- CN Anthracene, 9,10-bis(phenylethynyl)- (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



IC C09K011-465; C09K011-24; C09K011-12; C09K011-06  
 NCL 252301180  
 CC 74-13 (Radiation Chemistry, Photochemistry, and Photographic and  
 Other Reprographic Processes)  
 Section cross-reference(s): 73  
 IT Radiography  
 (laminog., computerized, index-matched phosphor  
 scintillator structure for)  
 IT 81-88-9 198-55-0 3073-87-8 10075-85-1 71245-74-4  
 (radiog. scintillator structure contg., for computerized tomog.)

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L24 ANSWER 1 OF 67 HCA COPYRIGHT 2003 ACS on STN  
 TI Hydrogen uptake on film surfaces produced by a unique  
 codeposition process

L24 ANSWER 2 OF 67 HCA COPYRIGHT 2003 ACS on STN  
 TI Steps to demarcate the effects of chromophore aggregation and  
 planarization in poly(phenyleneethynylene)s. 1. Rotationally  
 interrupted conjugation in the excited states of  
 1,4-bis(phenylethynyl)benzene. [Erratum to document cited in  
 CA135:46750]

L24 ANSWER 3 OF 67 HCA COPYRIGHT 2003 ACS on STN  
 TI Coating solution for forming electric insulating  
 films

L24 ANSWER 4 OF 67 HCA COPYRIGHT 2003 ACS on STN  
 TI Electrically insulating coating varnishes, and electric  
 insulator films and semiconductor devices using them

L24 ANSWER 5 OF 67 HCA COPYRIGHT 2003 ACS on STN  
 TI Real time measurement of small molecule diffusion in CO2-swollen  
 polymers using fluorescence nonradiative energy transfer techniques

L24 ANSWER 6 OF 67 HCA COPYRIGHT 2003 ACS on STN  
 TI Measurement of Probe Diffusion in CO2-Swollen Polystyrene Using in  
 Situ Fluorescence Nonradiative Energy Transfer

- L24 ANSWER 7 OF 67 HCA COPYRIGHT 2003 ACS on STN  
TI Light-emitting device and aromatic compound
- L24 ANSWER 8 OF 67 HCA COPYRIGHT 2003 ACS on STN  
TI Heat-resistant silsesquioxane-based polymers and their films and manufacture method
- L24 ANSWER 9 OF 67 HCA COPYRIGHT 2003 ACS on STN  
TI Luminescence property of anthracene-capped poly(p-phenyleneethynylene)
- L24 ANSWER 10 OF 67 HCA COPYRIGHT 2003 ACS on STN  
TI Polyarylene composition with enhanced modulus profile
- L24 ANSWER 11 OF 67 HCA COPYRIGHT 2003 ACS on STN  
TI Hydrogen scavengers
- L24 ANSWER 12 OF 67 HCA COPYRIGHT 2003 ACS on STN  
TI Aromatic polyarylene ether-based compositions and their materials for electrically insulating film formation
- L24 ANSWER 13 OF 67 HCA COPYRIGHT 2003 ACS on STN  
TI Thermally stable polymer network based on O-terphenyl
- L24 ANSWER 14 OF 67 HCA COPYRIGHT 2003 ACS on STN  
TI Hydrogen gettering packing material, and process for making same
- L24 ANSWER 15 OF 67 HCA COPYRIGHT 2003 ACS on STN  
TI Photophysics and evidence of excimer formation, linear bipyridines in solution and solid films
- L24 ANSWER 16 OF 67 HCA COPYRIGHT 2003 ACS on STN  
TI Polyarylene composition with enhanced modulus profile
- L24 ANSWER 17 OF 67 HCA COPYRIGHT 2003 ACS on STN  
TI Crosslinkable polyphenylene oligomers and polymers useful as dielectric resins in microelectronic fabrication
- L24 ANSWER 18 OF 67 HCA COPYRIGHT 2003 ACS on STN  
TI Organic electroluminescent device
- L24 ANSWER 19 OF 67 HCA COPYRIGHT 2003 ACS on STN  
TI Organic electroluminescent device
- L24 ANSWER 20 OF 67 HCA COPYRIGHT 2003 ACS on STN  
TI Thermally developable material
- L24 ANSWER 21 OF 67 HCA COPYRIGHT 2003 ACS on STN  
TI Polyphenylene oligomers, uncured polymer or cured polymer, and polyfunctional compound for dielectrics
- L24 ANSWER 22 OF 67 HCA COPYRIGHT 2003 ACS on STN

- TI Emission characteristics of organic light-emitting diodes with a heterostructure of dye doped poly(N-vinylcarbazole)/tris(8-hydroxyquinoline) aluminum
- L24 ANSWER 23 OF 67 HCA COPYRIGHT 2003 ACS on STN
- TI Organic electroluminescent device containing anthracene derivative and chelate complex
- L24 ANSWER 24 OF 67 HCA COPYRIGHT 2003 ACS on STN
- TI Polyquinoline polymer compositions containing photosensitive acid precursors for photolithography
- L24 ANSWER 25 OF 67 HCA COPYRIGHT 2003 ACS on STN
- TI Polyquinoline compositions containing diazo compounds for photolithography
- L24 ANSWER 26 OF 67 HCA COPYRIGHT 2003 ACS on STN
- TI New building blocks for sensors and supramolecular arrays. 7. Synthesis of sterically encumbered 2,9-diarylsubstituted phenanthrolines. Key building blocks for the preparation of mixed (bis-heteroleptic) phenanthroline copper(1) complexes. [Erratum to document cited in CA128:225103]
- L24 ANSWER 27 OF 67 HCA COPYRIGHT 2003 ACS on STN
- TI Tunneling across molecular wires: an analytical exactly solvable model
- L24 ANSWER 28 OF 67 HCA COPYRIGHT 2003 ACS on STN
- TI Organic electroluminescent device
- L24 ANSWER 29 OF 67 HCA COPYRIGHT 2003 ACS on STN
- TI Phenylquinoxaline Polymers and Low Molar Mass Glasses as Electron-Transport Materials in Organic Light-Emitting Diodes
- L24 ANSWER 30 OF 67 HCA COPYRIGHT 2003 ACS on STN
- TI Chemiluminescent lamp
- L24 ANSWER 31 OF 67 HCA COPYRIGHT 2003 ACS on STN
- TI Polyphenylene oligomers, uncured polymers, and cured polymers, polyfunctional compounds, and integrated circuit articles using dielectrics therefrom
- L24 ANSWER 32 OF 67 HCA COPYRIGHT 2003 ACS on STN
- TI Polymerizable composition containing onium borate initiator and its cured materials
- L24 ANSWER 33 OF 67 HCA COPYRIGHT 2003 ACS on STN
- TI Sulfonium complex polymerization initiators, initiator compositions and polymerizable compositions containing the same, and their cured products
- L24 ANSWER 34 OF 67 HCA COPYRIGHT 2003 ACS on STN

- TI Synthesis of polyphenylene derivatives by thermolysis of enediynes and dialkynylaromatic monomers
- L24 ANSWER 35 OF 67 HCA COPYRIGHT 2003 ACS on STN  
TI Sulfoxonium borates as energy-sensitive acid-generating agents, their compositions, curable compositions using the agents, and hybrid curable compositions
- L24 ANSWER 36 OF 67 HCA COPYRIGHT 2003 ACS on STN  
TI Energy-sensitive acid-generating agents, their compositions, curable compositions using them, and hybrid curable compositions
- L24 ANSWER 37 OF 67 HCA COPYRIGHT 2003 ACS on STN  
TI Photoinitiators and photoinitiator compositions and photocurable hybrid resin compositions
- L24 ANSWER 38 OF 67 HCA COPYRIGHT 2003 ACS on STN  
TI Chemiluminescence apparatus
- L24 ANSWER 39 OF 67 HCA COPYRIGHT 2003 ACS on STN  
TI Green light-emitting organic electroluminescent device with a new fluorescent dye dispersed in poly(N-vinylcarbazole) emitter layer
- L24 ANSWER 40 OF 67 HCA COPYRIGHT 2003 ACS on STN  
TI Small molecule diffusion in a rubbery near T<sub>g</sub>: effects of probe size, shape, and flexibility
- L24 ANSWER 41 OF 67 HCA COPYRIGHT 2003 ACS on STN  
TI Small Molecule Probe Diffusion in Thin Polymer **Films** near the Glass Transition: A Novel Approach Using Fluorescence Nonradiative Energy Transfer
- L24 ANSWER 42 OF 67 HCA COPYRIGHT 2003 ACS on STN  
TI Organic electroluminescence device
- L24 ANSWER 43 OF 67 HCA COPYRIGHT 2003 ACS on STN  
TI High performance lithium or zinc secondary batteries with **film-coated** anodes
- L24 ANSWER 44 OF 67 HCA COPYRIGHT 2003 ACS on STN  
TI Organic electroluminescent device
- L24 ANSWER 45 OF 67 HCA COPYRIGHT 2003 ACS on STN  
TI Reactivity of Disubstituted Benzocyclobutenes. Model Compounds of Cross-Linkable High-Performance Polymers
- L24 ANSWER 46 OF 67 HCA COPYRIGHT 2003 ACS on STN  
TI Multilayer wiring boards and manufacture thereof
- L24 ANSWER 47 OF 67 HCA COPYRIGHT 2003 ACS on STN  
TI Solid, thin chemiluminescent device

- L24 ANSWER 48 OF 67 HCA COPYRIGHT 2003 ACS on STN  
TI Photographic detection of sub-picomole fluoreseers by peroxyoxalate chemiluminescence reaction
- L24 ANSWER 49 OF 67 HCA COPYRIGHT 2003 ACS on STN  
TI Electrically connected laminate manufacture
- L24 ANSWER 50 OF 67 HCA COPYRIGHT 2003 ACS on STN  
TI Bipyridylacetylenes. 1. The synthesis of some bipyridylacetylenes via the palladium-catalyzed coupling of acetylenes with 2,2'-dibromobipyridyl, and the single crystal x-ray structure of 6,6'-bisphenylethynyl-2,2'-bipyridine
- L24 ANSWER 51 OF 67 HCA COPYRIGHT 2003 ACS on STN  
TI Preparation of 2-substituted ethynylthiophene acaricides and insecticides
- L24 ANSWER 52 OF 67 HCA COPYRIGHT 2003 ACS on STN  
TI Quenching of organic luminophor fluorescence by oxygen in thin polymer films
- L24 ANSWER 53 OF 67 HCA COPYRIGHT 2003 ACS on STN  
TI Assay for immobilized reporter groups
- L24 ANSWER 54 OF 67 HCA COPYRIGHT 2003 ACS on STN  
TI Lasing of UV radiation by vapors of complex molecules
- L24 ANSWER 55 OF 67 HCA COPYRIGHT 2003 ACS on STN  
TI Electronic excitation transfer in polymers. 3. Singlet-singlet, triplet-singlet, and triplet-triplet energy transfers. Evidence for triplet migration among pendant phenyl groups of polystyrene
- L24 ANSWER 56 OF 67 HCA COPYRIGHT 2003 ACS on STN  
TI Deterioration studies and storage lifetime of a commercial, packaged chemiluminescent formulation
- L24 ANSWER 57 OF 67 HCA COPYRIGHT 2003 ACS on STN  
TI Poly(phenylquinoxalines) with increased heat resistance
- L24 ANSWER 58 OF 67 HCA COPYRIGHT 2003 ACS on STN  
TI A novel photochemical cyclization of o-bisiodoethynylbenzene to substituted naphthalenes
- L24 ANSWER 59 OF 67 HCA COPYRIGHT 2003 ACS on STN  
TI Irradiation of 2,2'-bis(phenylethynyl)biphenyl
- L24 ANSWER 60 OF 67 HCA COPYRIGHT 2003 ACS on STN  
TI Ethynylation reactions. XXI. Ethynylation of o-quinones
- L24 ANSWER 61 OF 67 HCA COPYRIGHT 2003 ACS on STN  
TI Investigations on stilbenes. XLI. Conjugated tolazoles

- L24 ANSWER 62 OF 67 HCA COPYRIGHT 2003 ACS on STN  
TI Ethynylation reactions. XVIII. Mono- and diadditions of monosubstituted acetylene derivatives to unsubstituted and substituted anthraquinone
- L24 ANSWER 63 OF 67 HCA COPYRIGHT 2003 ACS on STN  
TI Ethynation reactions. IX. Aromatic diethynylhydrocarbons and the action of hydrogen halides on diethynyl-p-benzoquindiol
- L24 ANSWER 64 OF 67 HCA COPYRIGHT 2003 ACS on STN  
TI Ethynation reactions. VIII. Reactions of monosubstituted acetylene derivatives with quinones
- L24 ANSWER 65 OF 67 HCA COPYRIGHT 2003 ACS on STN  
TI Stilbenes. XIX. Polyphenylpolyenes
- L24 ANSWER 66 OF 67 HCA COPYRIGHT 2003 ACS on STN  
TI A synthesis of pseudopelletierine
- L24 ANSWER 67 OF 67 HCA COPYRIGHT 2003 ACS on STN  
TI A study of transannular rearrangements in the 9,10-bis-(phenylethynyl)anthracene series

=> d 124 3,4 cbib abs hitstr hitind

- L24 ANSWER 3 OF 67 HCA COPYRIGHT 2003 ACS on STN  
139:151176 **Coating** solution for forming electric insulating films. Yoshida, Yuji; Kunimi, Nobutaka (Sumitomo Chemical Company, Limited, Japan). U.S. Pat. Appl. Publ. US 2003143332 A1 20030731, 8 pp. (English). CODEN: USXXCO. APPLICATION: US 2003-341410 20030114. PRIORITY: JP 2002-23205 20020131.
- AB An object of the present invention is to provide a **coating** soln. which is capable of forming an insulating **film** exhibiting a low dielec. const. and superior insulating performance. The object is achieved by a **coating** soln. for forming insulating **film** comprising at least one selected from the group consisting of a compd. represented by an adamantane having .gtoreq.2 substituents contg. ethylenically or acetylenically unsatd. groups and a resin resulting from polymn. of an adamantane having .gtoreq.2 substituents contg. ethylenically or acetylenically unsatd. groups. A typical **coating** soln. was manufd. by stirring adamantane 2.72, tert-Bu bromide 55.3, diphenylacetylene 14.2 g until dissoln. occurred, adding 0.53 g AlCl<sub>3</sub> in 1 h, stirring 1 h, heating 1 h at 50.degree., and dissolving the resulting bis(phenylethynylphenyl)adamantane in anisole.
- IT 570384-68-8P  
(cured **coating**; **coating** solns. contg. adamantane having .gtoreq.2 substituents contg. ethylenically or acetylenically unsatd. groups for forming elec. insulating films)

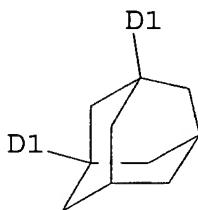
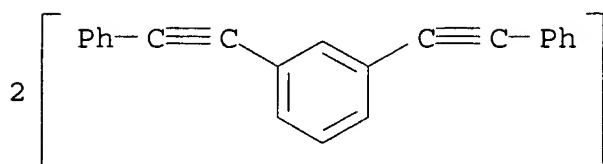
RN 570384-68-8 HCA  
 CN Tricyclo[3.3.1.1<sup>3,7</sup>]decane, 1,3-bis[bis(phenylethynyl)phenyl]-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 570384-29-1

CMF C54 H40

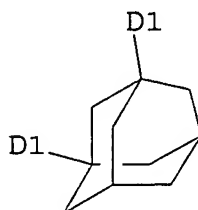
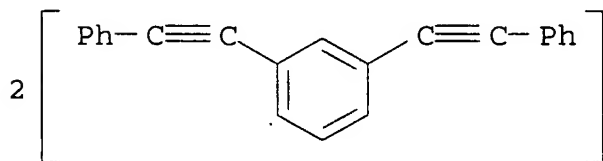
CCI IDS



IT 570384-29-1P  
 (monomer; coating solns. contg. adamantane having  
 .gtoreq.2 substituents contg. ethylenically or acetylenically  
 unsatd. groups for forming elec. insulating films)

RN 570384-29-1 HCA

CN Tricyclo[3.3.1.1<sup>3,7</sup>]decane, 1,3-bis[2,4(2,6 or 3,5)-bis(phenylethynyl)phenyl]- (9CI) (CA INDEX NAME)





IC ICM B05D003-02  
ICS C07C043-20

NCL 427372200; 568631000

CC 42-10 (Coatings, Inks, and Related Products)  
Section cross-reference(s): 76

ST elec insulating **coating** ethynyl adamantane polymer;  
ethenyl adamantane polymer elec insulating **coating**

IT Polyacetylenes, uses  
Polydiacetylenes  
(**coating** solns. contg. adamantane having .gtoreq.2  
substituents contg. ethylenically or acetylenically unsatd.  
groups for forming elec. insulating **films**)

IT Electric insulators  
(**coatings**; **coating** solns. contg. adamantane  
having .gtoreq.2 substituents contg. ethylenically or  
acetylenically unsatd. groups for forming elec. insulating  
**films**)

IT 135541-09-2P 570384-55-3P 570384-61-1P 570384-68-8P  
570384-74-6P 570384-81-5P 570384-86-0P 570384-93-9P  
(cured **coating**; **coating** solns. contg.  
adamantane having .gtoreq.2 substituents contg. ethylenically or  
acetylenically unsatd. groups for forming elec. insulating  
**films**)

IT 570384-18-8P 570384-25-7P 570384-29-1P 570384-34-8P  
570384-38-2P 570384-46-2P 570384-50-8P  
(monomer; **coating** solns. contg. adamantane having  
.gtoreq.2 substituents contg. ethylenically or acetylenically  
unsatd. groups for forming elec. insulating **films**)

IT 570384-22-4P, 1,3-Bis(dibromophenyl)adamantane  
(precursor; **coating** solns. contg. adamantane having  
.gtoreq.2 substituents contg. ethylenically or acetylenically  
unsatd. groups for forming elec. insulating **films**)

IT 100-42-5, Styrene, reactions 108-36-1, m-Dibromobenzene  
281-23-2, Adamantane 501-65-5, Diphenylacetylene 536-74-3,  
Ethynylbenzene 707-34-6, 1,3,5-Tribromoadamantane 876-53-9,  
1,3-Dibromoadamantane 1066-54-2, Trimethylsilylacetylene  
26264-10-8, Bromobiphenyl  
(precursor; **coating** solns. contg. adamantane having  
.gtoreq.2 substituents contg. ethylenically or acetylenically  
unsatd. groups for forming elec. insulating **films**)

L24 ANSWER 4 OF 67 HCA COPYRIGHT 2003 ACS on STN

139:118392 Electrically insulating **coating** varnishes, and  
electric insulator **films** and semiconductor devices using  
them. Ishikawa, Tadahiho; Saito, Hidenori; Murayama, Kazumoto  
(Sumitomo Bakelite Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP  
2003206441 A2 20030722, 27 pp. (Japanese). CODEN: JKXXAF.  
APPLICATION: JP 2002-280028 20020925. PRIORITY: JP 2001-294864  
20010926.

AB The **coating** varnishes contain (A) copolymers prepd. by  
reaction of polyamides having repeating units  
[NHX(OR1)(OR2)NHCOY1CO]<sub>m</sub>[NHX(OR3)(OR4)NHCOY2CO]<sub>n</sub> [m > 0; n .gtoreq.0;

2 .ltoreq. m + n .ltoreq. 1000; 0.05 .ltoreq. m/(m + n) .ltoreq. 1; R1-R4 = H, monovalent org. group; X = arom. tetravalent group; Y1 = acetylenic group-contg. divalent group, biphenylenediyl; Y2 = divalent group] with reactive oligomers having substituents reactive towards carboxyl, amino, or hydroxy groups of the polyamides, (B) acetylenes, and (C) org. solvents. Thus, 2.94 mmol 2,2-bis(3-amino-4-hydroxyphenyl)hexafluoropropane was polymd. with 3.0 mmol 2-phenylethynylterephthaloyl chloride in N-methyl-2-pyrrolidone in the presence of Et<sub>3</sub>N and the reaction product was condensed with 0.12 mmol 4-aminobenzoate ester-terminated styrene oligomer in .gamma.-butyrolactone to give a copolymer having Mw 20,000 and Mw/Mn 2.22. A varnish contg. the copolymer 1.0, 4,4'-bis(phenylethynyl)biphenyl (prepn. given) 0.2, and cyclohexanone 8.8 g was applied on a Si wafer and heated at 100.degree. for 30 min, at 200.degree. for 30 min, and at 400.degree. for 1 h to form a 1.23-.mu.m film showing dielec. const. 2.2, 5% wt.-loss temp. 521.degree., Tg >450.degree., elastic modulus 5 GPa, and .ltoreq.10-nm fine pores.

IT 562870-48-8P 562870-49-9P 562870-50-2P  
562870-53-5P 562870-54-6P 562870-55-7P  
562870-56-8P

(benzoxazole ring-contg.; coating varnishes contg. OH- and acetylenic group-contg. polyamides and acetylenes for nanoporous dielec. crosslinked polybenzoxazole films and semiconductor devices)

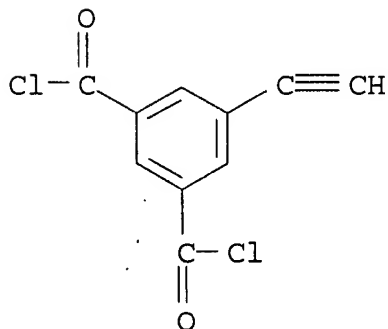
RN 562870-48-8 HCA

CN 1,3-Benzenedicarbonyl dichloride, 5-ethynyl-, polymer with .alpha.-(2-aminopropyl)-.omega.-(2-aminopropoxy)poly[oxy(methyl-1,2-ethanediyl)], 1,4-bis(phenylethynyl)benzene and 4,4'-diamino[1,1'-biphenyl]-3,3'-diol (9CI) (CA INDEX NAME)

CM 1

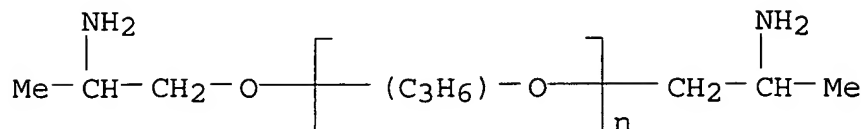
CRN 393543-05-0

CMF C10 H4 Cl2 O2



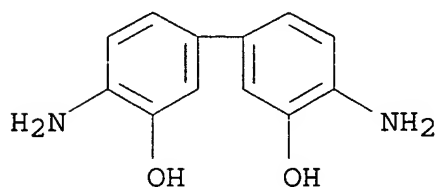
CM 2

CRN 26403-64-5  
 CMF (C3 H6 O)<sub>n</sub> C6 H16 N2 O  
 CCI IDS, PMS



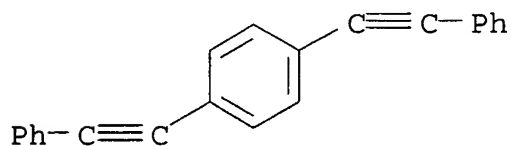
CM 3

CRN 2373-98-0  
 CMF C12 H12 N2 O2



CM 4

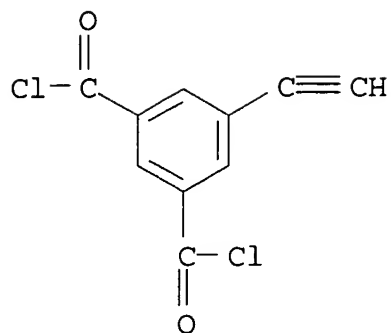
CRN 1849-27-0  
 CMF C22 H14



RN 562870-49-9 HCA  
 CN 1,3-Benzenedicarbonyl dichloride, 5-ethynyl-, polymer with  
 .alpha.-(2-aminopropyl)-.omega.-(2-aminopropoxy)poly[oxy(methyl-1,2-  
 ethanediyl)], 4,4'-bis(phenylethynyl)-1,1'-biphenyl and  
 4,4'-(9H-fluoren-9-ylidene)bis[2-aminophenol] (9CI) (CA INDEX NAME)

CM 1

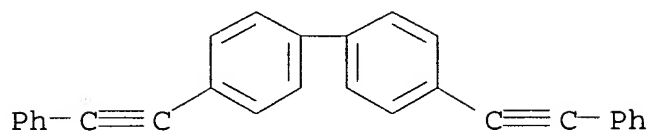
CRN 393543-05-0  
 CMF C10 H4 Cl2 O2



CM 2

CRN 53304-21-5

CMF C28 H18

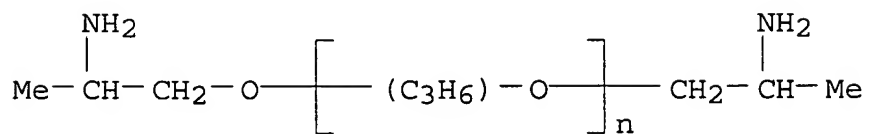


CM 3

CRN 26403-64-5

$$\text{CMF} \quad (\text{C}_3 \text{ H}_6 \text{ O})_n \text{ C}_6 \text{ H}_{16} \text{ N}_2 \text{ O}$$

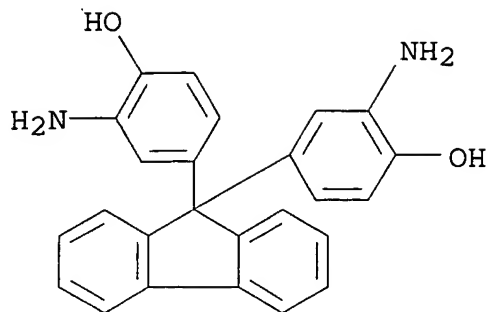
CCI    IDS,   PMS



CM 4

CRN 20638-07-7

CMF C25 H20 N2 O2



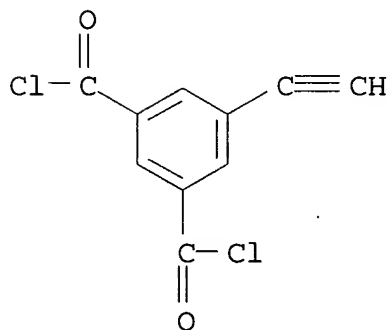
RN 562870-50-2 HCA

CN 1,3-Benzenedicarbonyl dichloride, 5-ethynyl-, polymer with .alpha.-(2-aminopropyl)-.omega.-(2-aminopropoxy)poly[oxy(methyl-1,2-ethanediyl)], 4,4'-bis(phenylethynyl)-1,1'-biphenyl and 4,4'-[2,2,2-trifluoro-1-(trifluoromethyl)ethylidene]bis[2-aminophenol] (9CI) (CA INDEX NAME)

CM 1

CRN 393543-05-0

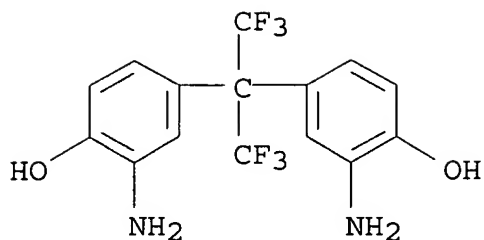
CMF C10 H4 Cl2 O2



CM 2

CRN 83558-87-6

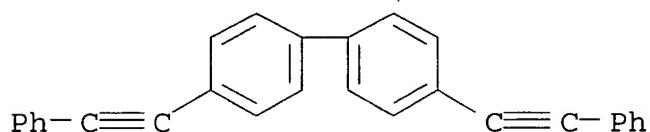
CMF C15 H12 F6 N2 O2



CM 3

CRN 53304-21-5

CMF C28 H18

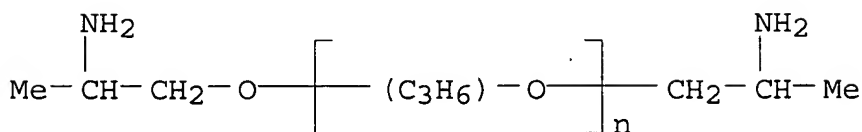


CM 4

CRN 26403-64-5

CMF (C3 H6 O)<sub>n</sub> C6 H16 N2 O

CCI IDS, PMS



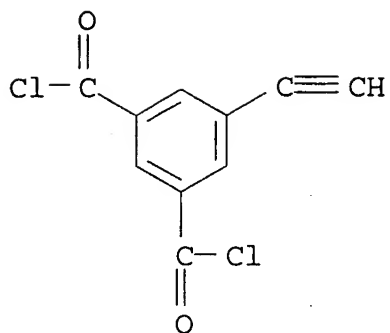
RN 562870-53-5 HCA

CN 1,3-Benzenedicarbonyl dichloride, 5-ethynyl-, polymer with .alpha.-(2-aminopropyl)-.omega.-(2-aminopropoxy)poly[oxy(methyl-1,2-ethanediyl)], 1,4-bis(phenylethynyl)benzene and 4,4'-(9H-fluoren-9-ylidene)bis[2-aminophenol] (9CI) (CA INDEX NAME)

CM 1

CRN 393543-05-0

CMF C10 H4 Cl2 O2

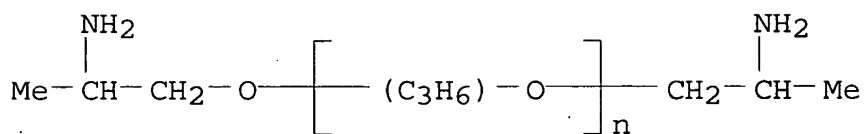


CM 2

CRN 26403-64-5

CMF (C3 H6 O)<sub>n</sub> C6 H16 N2 O

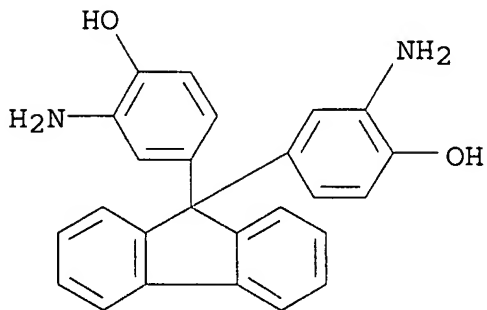
CCI IDS, PMS



CM 3

CRN 20638-07-7

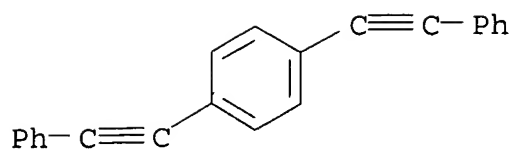
CMF C25 H20 N2 O2



CM 4

CRN 1849-27-0

CMF C22 H14



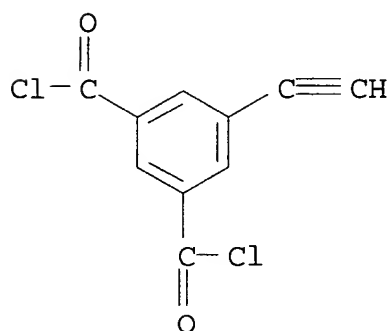
RN 562870-54-6 HCA

CN 1,3-Benzenedicarbonyl dichloride, 5-ethynyl-, polymer with  
 .alpha.-(2-aminopropyl)-.omega.-(2-aminopropoxy)poly[oxy(methyl-1,2-  
 ethanediyl)], 1,4-bis(phenylethynyl)naphthalene and  
 4,4'-diamino[1,1'-biphenyl]-3,3'-diol (9CI) (CA INDEX NAME)

CM 1

CRN 393543-05-0

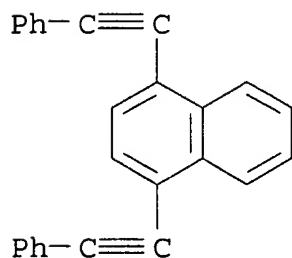
CMF C10 H4 Cl2 O2



CM 2

CRN 73888-61-6

CMF C26 H16

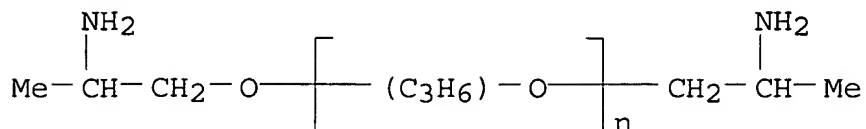


CM 3

CRN 26403-64-5

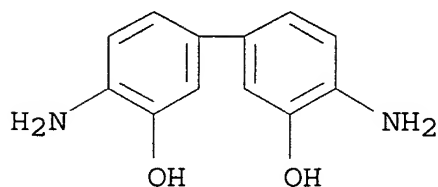


CMF (C3 H6 O)n C6 H16 N2 O  
CCI IDS, PMS



CM 4

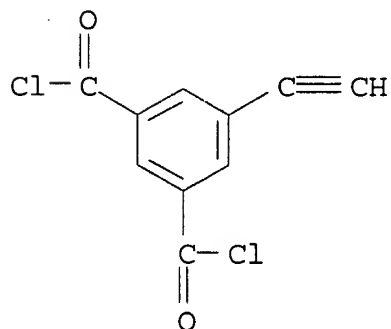
CRN 2373-98-0  
CMF C12 H12 N2 O2



RN 562870-55-7 HCA  
CN 2,7-Biphenylenedicarbonyl dichloride, polymer with  
.alpha.-(2-aminopropyl)-.omega.-(2-aminopropoxy)poly[oxy(methyl-1,2-ethanediyl)], 1,4-bis(phenylethynyl)benzene, 4,4'-diamino[1,1'-biphenyl]-3,3'-diol and 5-ethynyl-1,3-benzenedicarbonyl dichloride  
(9CI) (CA INDEX NAME)

CM 1

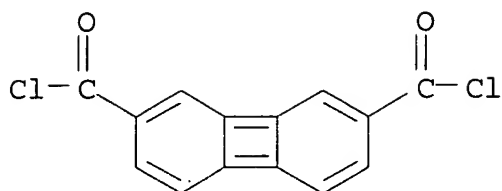
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CMF C10 H4 Cl2 O2



CM 2

CRN 69417-81-8

CMF C14 H6 Cl2 O2

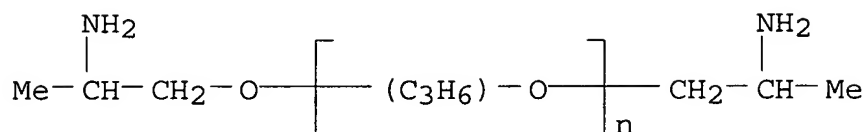


CM 3

CRN 26403-64-5

CMF (C3 H6 O)<sub>n</sub> C6 H16 N2 O

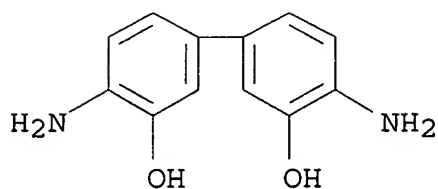
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CM 4

CRN 2373-98-0

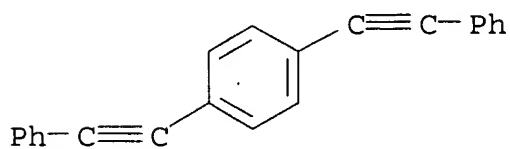
CMF C12 H12 N2 O2



CM 5

CRN 1849-27-0

CMF C22 H14



RN 562870-56-8 HCA

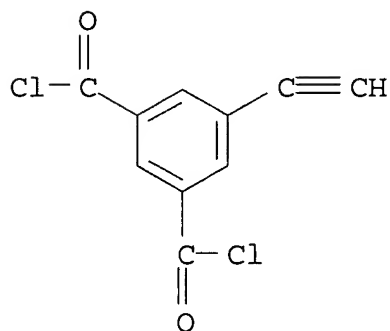
CN 1,3-Benzenedicarbonyl dichloride, 5-ethynyl-, polymer with

.alpha.-(2-aminopropyl)-.omega.-(2-aminopropoxy)poly[oxy(methyl-1,2-ethanediyl)], 1,4-benzenedicarbonyl dichloride, 1,4-bis(phenylethynyl)naphthalene, 4,4'-diamino[1,1'-biphenyl]-3,3'-diol and 4,4'-(9H-fluoren-9-ylidene)bis[2-aminophenol], block (9CI) (CA INDEX NAME)

CM 1

CRN 393543-05-0

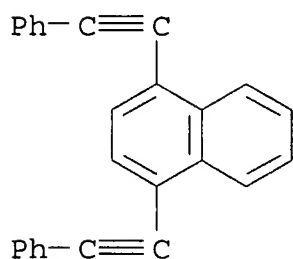
CMF C10 H4 Cl2 O2



CM 2

CRN 73888-61-6

CMF C26 H16

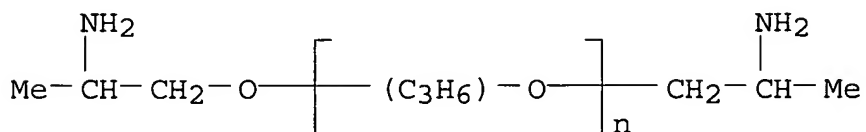


CM 3

CRN 26403-64-5

CMF (C3 H6 O)<sub>n</sub> C6 H16 N2 O

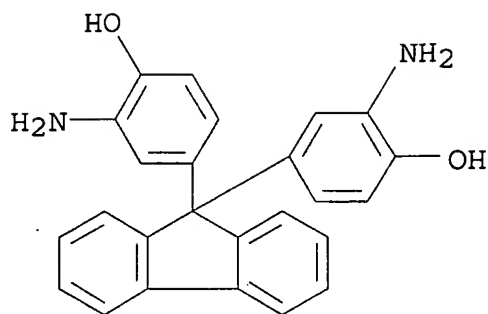
CCI IDS, PMS



CM 4

CRN 20638-07-7

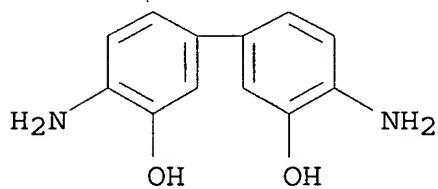
CMF C25 H20 N2 O2



CM 5

CRN 2373-98-0

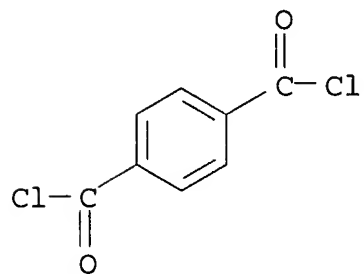
CMF C12 H12 N2 O2



CM 6

CRN 100-20-9

CMF C8 H4 Cl2 O2



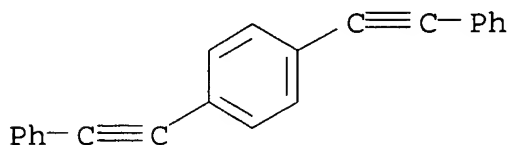
IT 1849-27-0P, 1,4-Bis(phenylethynyl)benzene  
53304-21-5P, 4,4'-Bis(phenylethynyl)biphenyl

73888-61-6P

(coating varnishes contg. OH- and acetylenic group-contg. polyamides and acetylenes for nanoporous dielec. crosslinked polybenzoxazole films and semiconductor devices)

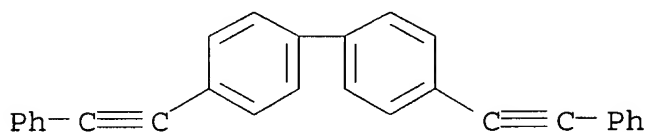
RN 1849-27-0 HCA

CN Benzene, 1,4-bis(phenylethynyl)- (9CI) (CA INDEX NAME)



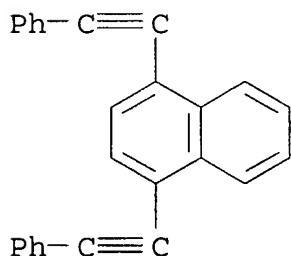
RN 53304-21-5 HCA

CN 1,1'-Biphenyl, 4,4'-bis(phenylethynyl)- (9CI) (CA INDEX NAME)



RN 73888-61-6 HCA

CN Naphthalene, 1,4-bis(phenylethynyl)- (9CI) (CA INDEX NAME)



IC ICM C09D179-04

ICS C08G073-22; C09D005-25; C09D201-02; H01B003-30; H01L021-312

CC 38-3 (Plastics Fabrication and Uses)

Section cross-reference(s): 37, 42, 76

ST coating varnish dielec acetylene polyamide semiconductor;  
elec insulator film polyamide acetylene polybenzoxazole;  
heat resistance dielec film acetylene polybenzoxazole;  
nanoporous dielec film acetylene polybenzoxazole  
semiconductor

IT Crosslinking agents

(acetylenes; coating varnishes contg. OH- and acetylenic group-contg. polyamides and acetylenes for nanoporous dielec. crosslinked polybenzoxazole films and semiconductor devices)

IT Polyamides, uses

(block, cardo, poly(methylstyrene)-; **coating** varnishes contg. OH- and acetylenic group-contg. polyamides and acetylenes for nanoporous dielec. crosslinked polybenzoxazole **films** and semiconductor devices)

IT Semiconductor devices

Varnishes

(**coating** varnishes contg. OH- and acetylenic group-contg. polyamides and acetylenes for nanoporous dielec. crosslinked polybenzoxazole **films** and semiconductor devices)

IT Alkynes

(crosslinking agents; **coating** varnishes contg. OH- and acetylenic group-contg. polyamides and acetylenes for nanoporous dielec. crosslinked polybenzoxazole **films** and semiconductor devices)

IT Heat-resistant materials

(dielec.; **coating** varnishes contg. OH- and acetylenic group-contg. polyamides and acetylenes for nanoporous dielec. crosslinked polybenzoxazole **films** and semiconductor devices)

IT Polyamides, uses

(fluorine-contg., block, polystyrene-; **coating** varnishes contg. OH- and acetylenic group-contg. polyamides and acetylenes for nanoporous dielec. crosslinked polybenzoxazole **films** and semiconductor devices)

IT Electric insulators

(heat-resistant; **coating** varnishes contg. OH- and acetylenic group-contg. polyamides and acetylenes for nanoporous dielec. crosslinked polybenzoxazole **films** and semiconductor devices)

IT Dielectric **films**

(nanoporous; **coating** varnishes contg. OH- and acetylenic group-contg. polyamides and acetylenes for nanoporous dielec. crosslinked polybenzoxazole **films** and semiconductor devices)

IT Polybenzoxazoles

(polyacetylene-, cardo; **coating** varnishes contg. OH- and acetylenic group-contg. polyamides and acetylenes for nanoporous dielec. crosslinked polybenzoxazole **films** and semiconductor devices)

IT Polyamides, uses

(polyacetylene-, fluorine-contg., block, polystyrene- or poly(Me methacrylate)-; **coating** varnishes contg. OH- and acetylenic group-contg. polyamides and acetylenes for nanoporous dielec. crosslinked polybenzoxazole **films** and semiconductor devices)

IT Polybenzoxazoles

(polyacetylene-, fluorine-contg.; **coating** varnishes contg. OH- and acetylenic group-contg. polyamides and acetylenes for nanoporous dielec. crosslinked polybenzoxazole **films** and semiconductor devices)

IT Fluoropolymers, uses

(polyacetylene-polyamide-, block, polystyrene- or poly(Me methacrylate)-; **coating** varnishes contg. OH- and acetylenic group-contg. polyamides and acetylenes for nanoporous dielec. crosslinked polybenzoxazole **films** and semiconductor devices)

- IT Polyesters, uses  
Polyoxyalkylenes, uses  
Polyurethanes, uses  
(polyacetylene-polybenzoxazole-, cardo; **coating** varnishes contg. OH- and acetylenic group-contg. polyamides and acetylenes for nanoporous dielec. crosslinked polybenzoxazole **films** and semiconductor devices)
- IT Polyoxyalkylenes, uses  
(polyacetylene-polybenzoxazole-, fluorine-contg.; **coating** varnishes contg. OH- and acetylenic group-contg. polyamides and acetylenes for nanoporous dielec. crosslinked polybenzoxazole **films** and semiconductor devices)
- IT Fluoropolymers, uses  
Polyesters, uses  
Polyoxyalkylenes, uses  
(polyacetylene-polybenzoxazole-; **coating** varnishes contg. OH- and acetylenic group-contg. polyamides and acetylenes for nanoporous dielec. crosslinked polybenzoxazole **films** and semiconductor devices)
- IT Polyethers, uses  
(polyacetylene-polybenzoxazole-polyester-; **coating** varnishes contg. OH- and acetylenic group-contg. polyamides and acetylenes for nanoporous dielec. crosslinked polybenzoxazole **films** and semiconductor devices)
- IT Cardo polymers  
(polyacetylene-polybenzoxazole-polyesters; **coating** varnishes contg. OH- and acetylenic group-contg. polyamides and acetylenes for nanoporous dielec. crosslinked polybenzoxazole **films** and semiconductor devices)
- IT Polyesters, uses  
(polyacetylene-polybenzoxazole-polyether-; **coating** varnishes contg. OH- and acetylenic group-contg. polyamides and acetylenes for nanoporous dielec. crosslinked polybenzoxazole **films** and semiconductor devices)
- IT Fluoropolymers, uses  
(polyacetylene-polybenzoxazole-polyoxyalkylene-; **coating** varnishes contg. OH- and acetylenic group-contg. polyamides and acetylenes for nanoporous dielec. crosslinked polybenzoxazole **films** and semiconductor devices)
- IT Cardo polymers  
(polyacetylene-polybenzoxazole-polyoxyalkylenes; **coating** varnishes contg. OH- and acetylenic group-contg. polyamides and acetylenes for nanoporous dielec. crosslinked polybenzoxazole **films** and semiconductor devices)
- IT Cardo polymers  
(polyacetylene-polybenzoxazole-polyurethanes; **coating** varnishes contg. OH- and acetylenic group-contg. polyamides and

- acetylenes for nanoporous dielec. crosslinked polybenzoxazole films and semiconductor devices)
- IT Cardo polymers  
(polyacetylene-polybenzoxazoles; **coating** varnishes contg. OH- and acetylenic group-contg. polyamides and acetylenes for nanoporous dielec. crosslinked polybenzoxazole films and semiconductor devices)
- IT Polybenzoxazoles  
(polyacetylene-polyester-, cardo; **coating** varnishes contg. OH- and acetylenic group-contg. polyamides and acetylenes for nanoporous dielec. crosslinked polybenzoxazole films and semiconductor devices)
- IT Polybenzoxazoles  
(polyacetylene-polyester-; **coating** varnishes contg. OH- and acetylenic group-contg. polyamides and acetylenes for nanoporous dielec. crosslinked polybenzoxazole films and semiconductor devices)
- IT Polybenzoxazoles  
(polyacetylene-polyester-polyether-; **coating** varnishes contg. OH- and acetylenic group-contg. polyamides and acetylenes for nanoporous dielec. crosslinked polybenzoxazole films and semiconductor devices)
- IT Polybenzoxazoles  
(polyacetylene-polyoxyalkylene-, cardo; **coating** varnishes contg. OH- and acetylenic group-contg. polyamides and acetylenes for nanoporous dielec. crosslinked polybenzoxazole films and semiconductor devices)
- IT Polybenzoxazoles  
(polyacetylene-polyoxyalkylene-, fluorine-contg.; **coating** varnishes contg. OH- and acetylenic group-contg. polyamides and acetylenes for nanoporous dielec. crosslinked polybenzoxazole films and semiconductor devices)
- IT Polybenzoxazoles  
(polyacetylene-polyoxyalkylene-; **coating** varnishes contg. OH- and acetylenic group-contg. polyamides and acetylenes for nanoporous dielec. crosslinked polybenzoxazole films and semiconductor devices)
- IT Polybenzoxazoles  
(polyacetylene-polyurethane-, cardo; **coating** varnishes contg. OH- and acetylenic group-contg. polyamides and acetylenes for nanoporous dielec. crosslinked polybenzoxazole films and semiconductor devices)
- IT Polyesters, uses  
Polyoxyalkylenes, uses  
(polyamide-, block, cardo; **coating** varnishes contg. OH- and acetylenic group-contg. polyamides and acetylenes for nanoporous dielec. crosslinked polybenzoxazole films and semiconductor devices)
- IT Fluoropolymers, uses  
(polyamide-, block, polystyrene-; **coating** varnishes contg. OH- and acetylenic group-contg. polyamides and acetylenes for nanoporous dielec. crosslinked polybenzoxazole films



- and semiconductor devices)
- IT Polyesters, uses  
Polyoxyalkylenes, uses  
(polyamide-, block; **coating** varnishes contg. OH- and acetylenic group-contg. polyamides and acetylenes for nanoporous dielec. crosslinked polybenzoxazole **films** and semiconductor devices)
- IT Polyurethanes, uses  
(polyamide-, cardo; **coating** varnishes contg. OH- and acetylenic group-contg. polyamides and acetylenes for nanoporous dielec. crosslinked polybenzoxazole **films** and semiconductor devices)
- IT Polyacetylenes, uses  
(polyamide-, fluorine-contg., block, polystyrene- or poly(Me methacrylate)-; **coating** varnishes contg. OH- and acetylenic group-contg. polyamides and acetylenes for nanoporous dielec. crosslinked polybenzoxazole **films** and semiconductor devices)
- IT Polyoxyalkylenes, uses  
(polyamide-, fluorine-contg., block; **coating** varnishes contg. OH- and acetylenic group-contg. polyamides and acetylenes for nanoporous dielec. crosslinked polybenzoxazole **films** and semiconductor devices)
- IT Polyethers, uses  
(polyamide-polyester-, block; **coating** varnishes contg. OH- and acetylenic group-contg. polyamides and acetylenes for nanoporous dielec. crosslinked polybenzoxazole **films** and semiconductor devices)
- IT Cardo polymers  
(polyamide-polyesters, block; **coating** varnishes contg. OH- and acetylenic group-contg. polyamides and acetylenes for nanoporous dielec. crosslinked polybenzoxazole **films** and semiconductor devices)
- IT Polyesters, uses  
(polyamide-polyether-, block; **coating** varnishes contg. OH- and acetylenic group-contg. polyamides and acetylenes for nanoporous dielec. crosslinked polybenzoxazole **films** and semiconductor devices)
- IT Fluoropolymers, uses  
(polyamide-polyoxyalkylene-, block; **coating** varnishes contg. OH- and acetylenic group-contg. polyamides and acetylenes for nanoporous dielec. crosslinked polybenzoxazole **films** and semiconductor devices)
- IT Cardo polymers  
(polyamide-polyoxyalkylenes, block; **coating** varnishes contg. OH- and acetylenic group-contg. polyamides and acetylenes for nanoporous dielec. crosslinked polybenzoxazole **films** and semiconductor devices)
- IT Cardo polymers  
(polyamide-polyurethanes; **coating** varnishes contg. OH- and acetylenic group-contg. polyamides and acetylenes for nanoporous dielec. crosslinked polybenzoxazole **films**

- and semiconductor devices)
- IT Cardo polymers  
(polyamides, block, poly(methylstyrene)-; **coating**  
varnishes contg. OH- and acetylenic group-contg. polyamides and  
acetylenes for nanoporous dielec. crosslinked polybenzoxazole  
**films** and semiconductor devices)
- IT Polyacetylenes, uses  
(polybenzoxazole-, cardo; **coating** varnishes contg. OH-  
and acetylenic group-contg. polyamides and acetylenes for  
nanoporous dielec. crosslinked polybenzoxazole **films**  
and semiconductor devices)
- IT Polyacetylenes, uses  
(polybenzoxazole-, fluorine-contg.; **coating** varnishes  
contg. OH- and acetylenic group-contg. polyamides and acetylenes  
for nanoporous dielec. crosslinked polybenzoxazole **films**  
and semiconductor devices)
- IT Polyacetylenes, uses  
(polybenzoxazole-polyester-, cardo; **coating** varnishes  
contg. OH- and acetylenic group-contg. polyamides and acetylenes  
for nanoporous dielec. crosslinked polybenzoxazole **films**  
and semiconductor devices)
- IT Polyacetylenes, uses  
(polybenzoxazole-polyester-; **coating** varnishes contg.  
OH- and acetylenic group-contg. polyamides and acetylenes for  
nanoporous dielec. crosslinked polybenzoxazole **films**  
and semiconductor devices)
- IT Polyacetylenes, uses  
(polybenzoxazole-polyester-polyether-; **coating**  
varnishes contg. OH- and acetylenic group-contg. polyamides and  
acetylenes for nanoporous dielec. crosslinked polybenzoxazole  
**films** and semiconductor devices)
- IT Polyacetylenes, uses  
(polybenzoxazole-polyoxyalkylene-, cardo; **coating**  
varnishes contg. OH- and acetylenic group-contg. polyamides and  
acetylenes for nanoporous dielec. crosslinked polybenzoxazole  
**films** and semiconductor devices)
- IT Polyacetylenes, uses  
(polybenzoxazole-polyoxyalkylene-, fluorine-contg.;  
**coating** varnishes contg. OH- and acetylenic group-contg.  
polyamides and acetylenes for nanoporous dielec. crosslinked  
polybenzoxazole **films** and semiconductor devices)
- IT Polyacetylenes, uses  
(polybenzoxazole-polyoxyalkylene-; **coating** varnishes  
contg. OH- and acetylenic group-contg. polyamides and acetylenes  
for nanoporous dielec. crosslinked polybenzoxazole **films**  
and semiconductor devices)
- IT Polyacetylenes, uses  
(polybenzoxazole-polyurethane-, cardo; **coating**  
varnishes contg. OH- and acetylenic group-contg. polyamides and  
acetylenes for nanoporous dielec. crosslinked polybenzoxazole  
**films** and semiconductor devices)
- IT Polyamides, uses

(polyester-, block, cardo; **coating** varnishes contg. OH- and acetylenic group-contg. polyamides and acetylenes for nanoporous dielec. crosslinked polybenzoxazole **films** and semiconductor devices)

- IT Polyamides, uses  
(polyester-, block; **coating** varnishes contg. OH- and acetylenic group-contg. polyamides and acetylenes for nanoporous dielec. crosslinked polybenzoxazole **films** and semiconductor devices)
- IT Polyamides, uses  
(polyester-polyether-, block; **coating** varnishes contg. OH- and acetylenic group-contg. polyamides and acetylenes for nanoporous dielec. crosslinked polybenzoxazole **films** and semiconductor devices)
- IT Polyamides, uses  
(polyoxyalkylene-, block, cardo; **coating** varnishes contg. OH- and acetylenic group-contg. polyamides and acetylenes for nanoporous dielec. crosslinked polybenzoxazole **films** and semiconductor devices)
- IT Polyamides, uses  
(polyoxyalkylene-, block; **coating** varnishes contg. OH- and acetylenic group-contg. polyamides and acetylenes for nanoporous dielec. crosslinked polybenzoxazole **films** and semiconductor devices)
- IT Polyamides, uses  
(polyoxyalkylene-, fluorine-contg., block; **coating** varnishes contg. OH- and acetylenic group-contg. polyamides and acetylenes for nanoporous dielec. crosslinked polybenzoxazole **films** and semiconductor devices)
- IT Polyamides, uses  
(polyurethane-, cardo; **coating** varnishes contg. OH- and acetylenic group-contg. polyamides and acetylenes for nanoporous dielec. crosslinked polybenzoxazole **films** and semiconductor devices)
- IT 562870-48-8P 562870-49-9P 562870-50-2P  
562870-51-3P 562870-52-4P 562870-53-5P  
562870-54-6P 562870-55-7P 562870-56-8P  
(benzoxazole ring-contg.; **coating** varnishes contg. OH- and acetylenic group-contg. polyamides and acetylenes for nanoporous dielec. crosslinked polybenzoxazole **films** and semiconductor devices)
- IT 4194-40-5DP, 3,3'-Diamino-4,4'-dihydroxybiphenyl, polymers with phenylethynylisophthaloyl chloride and aminobenzoate-terminated ester oligomer or ether-ester oligomer, block 20638-07-7DP, 9,9-Bis[(3-amino-4-hydroxy)phenyl]fluorene, polymers with phenylethynylterephthaloyl chloride and urethane oligomer 393543-14-1DP, polymers with diaminodihydroxybiphenyl and aminobenzoate-terminated ester oligomer or ether-ester oligomer, block 562870-37-5DP, polymers with bis[(aminohydroxy)phenyl]fluorene and urethane oligomer 562870-38-6P, 2,2-Bis(3-amino-4-hydroxyphenyl)hexafluoropropane-2-phenylethynylterephthaloyl chloride-styrene block copolymer 562870-39-7P 562870-40-0P

562870-41-1P 562870-42-2P 562870-43-3P 562870-44-4P  
562870-45-5P 562870-46-6P 562870-47-7P

(coating varnishes contg. OH- and acetylenic  
group-contg. polyamides and acetylenes for nanoporous dielec.  
crosslinked polybenzoxazole films and semiconductor  
devices)

IT 1849-27-0P, 1,4-Bis(phenylethynyl)benzene  
53304-21-5P, 4,4'-Bis(phenylethynyl)biphenyl  
73888-61-6P 118688-56-5P, 1,3,5-Tris(phenylethynyl)benzene  
478070-32-5P

(coating varnishes contg. OH- and acetylenic  
group-contg. polyamides and acetylenes for nanoporous dielec.  
crosslinked polybenzoxazole films and semiconductor  
devices)

IT 83-53-4, 1,4-Dibromonaphthalene 92-86-4, 4,4'-Dibromobiphenyl  
106-37-6, 1,4-Dibromobenzene 536-74-3, Ethynylbenzene 626-39-1,  
1,3,5-Tribromobenzene 16400-50-3, 3,3',5,5'-Tetrabromobiphenyl

(coating varnishes contg. OH- and acetylenic  
group-contg. polyamides and acetylenes for nanoporous dielec.  
crosslinked polybenzoxazole films and semiconductor  
devices)